THE REPORT OF THE MINISTER'S TASK FORCE ON HAZARDOUS WASTE MANAGEMENT

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Nova Scotia

Task Force on
Hazardous Waste Management

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Honourable Laird Stirling, Minister
Nova Scotia Department of the
Environment
Halifax, Nova Scotia

Dear Mr. Minister:

We are pleased to present the Report of the Minister's Task Force on Hazardous Waste Management. The Task Force unanimously recommends this Report to you.

Our conclusions and recommendations are based on extensive consultations with business leaders, academics, consultants, emergency response personnel, government officials, waste disposal agencies, community and environment groups and individual Nova Scotians. The interest and concern of Nova Scotians for their environment, and the safe management of dangerous goods and hazardous wastes is reflected in the 107 submissions we received and the hundreds of Nova Scotians who took the time to share their views with us.

In preparing the recommendations, our objective was to devise a strategy that reflected Nova Scotian needs and Nova Scotian interests. We believe that the public consultation process which was undertaken enabled us to achieve this objective. The process of consultation, and attempts to safely manage dangerous goods and hazardous wastes, must not end with the submission of our Report. Nova Scotians expect that the necessary measures will be implemented and that they will play a role in their implementation.

The Task Force was told by Nova Scotians that they are aware of their responsibility to manage the dangerous goods and hazardous wastes that they use and generate. They believe that their Government must take the lead in ensuring that policies and procedures are established so that all sectors of our community can meet their shared responsibility.

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Throughout our meetings, the Government of Nova Scotia was praised for demonstrating both its concern for this important issue and the necessity to consult with Nova Scotians. It is important that the good will and opportunity created by this process is not lost.

We would like to thank you and your predecessors, whom we have had the pleasure to serve, for your support and encouragement. We remain,

Respectfully yours,

Paul Buxton, P. Eng.
Chairman

Audrey Manzer

James MacDonald

James Harrison

Duncan MacKay, P. Eng.

Harry Cook

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ACKNOWLEDGEMENTS

The Minister's Task Force on Hazardous Waste Mangement acknowledges the significant contribution made to their Report by the many groups and individuals who prepared written submissions or met with the Task Force to discuss the issue of dangerous goods and hazardous wastes management. This Report could not have been written without their interest and their recommendations.

The Task Force would like to thank Ms. Donna McCready and Mr. Howard Windsor, who arranged the Task Force's community meetings and acted as support staff to the Task Force.

The Task Force is grateful to Mrs. Fay Landry and Ms. Sue Hollett for the secretarial services which they provided.

EXECUTIVE SUMMARY

The Minister's Task Force on Hazardous Waste Mangement was established in 1985 by the Minister of the Environment to "examine the hazardous wastes management problem in Nova Scotia and to file an action plan to deal with it". In the autumn of 1985, the Task Force submitted a Phase I Report to the Minister. The Report recommended that the Task Force initiate development of a comprehensive strategy for managing dangerous goods and hazardous wastes in Nova Scotia. The Task Force also recommended that the process for developing this strategy should rely significantly on consultation with Nova Scotians. Early in 1986, the Minister accepted the Phase I Report recommendations of the Task Force.

The Task Force held public consultation sessions in ten locations throughout the Province and received 107 oral and written submissions. In addition, the Task Force heard from hundreds of Nova Scotians during informal evening sessions.

The public consultation process began a few months after the fire at the Maple Leaf Farms Limited pesticides warehouse in Canning, Nova Scotia. This incident along with the discovery of tetrachlorethylene wastes from dry cleaning establishments in New Minas and Amherst; the burning of waste oil contaminated with PCB's in Halifax; a sodium cyanide spill in Yarmouth; the Sydney Tar Ponds Clean-up Projects; and the release of the Metropolitan Area Special Waste Management Study; tended to focus public discussions on the need for a comprehensive strategy.

The Task Force heard from industry representatives, waste disposal companies, emergency response personnel, consultants, academics, environmental groups, government officials and individual Nova Scotians. While many of them believe that strides have been made over the last few years to improve the management of dangerous goods and hazardous wastes, they believe that more must be done to protect people and the environment from the use, storage, transportation and disposal of dangerous goods and hazardous wastes.

Based on discussions with Nova Scotians, the Task Force has formulated five guiding principles which it used to develop its recommendations. These guiding principles are:

Through a comprehensive strategy, the Province must assume a leadership role in providing for the safe management of dangerous goods and hazardous wastes.

The public must be provided with extensive opportunities to participate in the formulation of any plans, policies and programs implemented by the strategy.

The efforts of government, industry, institutions and individuals must be directed toward reducing and re-using dangerous goods and thereby minimize the volume of hazardous wastes generated.

As a general principle, Nova Scotians must be responsible for managing the hazardous wastes generated in their province.

Hazardous wastes should not be generated in Nova Scotia unless there are approved disposal methods for these wastes.

On the basis of these five principles, the Task Force makes the following recommendations for the comprehensive management of dangerous goods and hazardous wastes in Nova Scotia.

DEFINING DANGEROUS GOODS AND HAZARDOUS WASTES

Recommendation 1
Designated Dangerous Goods and Hazardous Wastes
The Minister of the Environment should immediately designate PCB's, contaminated waste oil, asbestos, and tetrachloroethylene as dangerous goods and hazardous wastes under the Dangerous Goods and Hazardous Wastes Management Act.

Recommendation 2
Hazardous Wastes Criteria
The Minister of the Environment should adopt criteria similar to those in other Canadian jurisdictions under the Dangerous Goods and Hazardous Wastes Management Act to define dangerous goods and hazardous wastes.

To promote uniformity, the criteria should closely reflect those used by Nova Scotia to designate dangerous goods under the Dangerous Goods Transportation Act.

Recommendation 3
Public Notification
The Minister should allow one year for persons to comply with those provisions of the Dangerous Goods and Hazardous Wastes Management Act following the adoption of regulations which apply to dangerous goods and hazardous wastes that meet the criteria as set out in Recommendation 2.

HAZARDOUS WASTE MANAGEMENT FACILITIES

Recommendation 4
Transfer Facility (Facilities) for Hazardous Wastes
The Minister of the Environment should undertake a five-year Action Plan to develop a hazardous wastes transfer facility (facilities) for Nova Scotia.

Recommendation 5
Inventory
The Minister of the Environment should prepare an inventory of hazardous wastes generated in all regions of the Province. The inventory should include information on point of generation, volumes, types, current disposal methods and other pertinent items. Inventory data on generation rates in Halifax-Dartmouth should be revised to include those generators not included in the Porter Dillon Study. The inventory should be performed by independent, qualified and experienced individuals. To ensure the on-going monitoring of generation rates and the adequacy of facilities, the inventory must be periodically updated.

Recommendation 6
Site Selection
The Minister of the Environment should initiate site identification studies for the development of a transfer facility (facilities). In selecting potential sites, the number of transfer facilities required to service the Province adequately should be assessed. Only these sites that afford maximum protection of public health and the environment should be considered. These studies must be conducted by independent, qualified and experienced individuals.

Recommendation 7
Public Consultation
The Minister of the Environment must ensure that the public is informed of the process for identifying potential hazardous waste transfer facility sites. The public must be consulted prior to, and throughout, any detailed environmental assessment of these sites. The public consultation process must be conducted by independent, qualified and experienced individuals.

Recommendation 8
Development of Transfer Facilities
The Minister of the Environment must establish specifications for the construction and operation of any transfer facility.

The Minister should issue a call for proposals to qualified specialists that may have an interest in constructing and operating transfer facilities that satisfy the Minister's specifications.

The Minister should proceed to construct and operate any facility under Provincial ownership in the event that qualified specialists are unable, or unwilling, to satisfy the specifications.

Recommendation 9
Finances
The user pay principle should be applied as an objective for financing a transfer facility regardless of whether the facility is developed by the private or the public sectors.

Recommendation 10
Existing Transfer Facilities
The Minister of the Environment should not preclude persons currently involved in the waste transfer business from either submitting proposals or operating competitive services. However, after the construction of any transfer facility resulting from implementation of these recommendations, any existing transfer facility, or proposed transfer facility, should be required to proceed through an environmental assessment and public consultation process as proposed in these Recommendations.

Recommendation 11
Treatment Systems
The Minister of the Environment should continue to monitor opportunities to develop partial treatment systems in Nova Scotia.

Any proposal to develop partial or fully integrated treatment systems must be extensively studied and rigorously regulated. Extensive public consultation is mandatory.

Recommendation 12
Mobile Treatment Facilities
The use of mobile treatment systems should be continued where feasible and after obtaining appropriate regulatory approvals. Public notification of the use of mobile systems must be undertaken.

EMERGENCY RESPONSE

Recommendation 13
Role of the Fire Service
The Minister of the Environment should form a Working Group consisting of representatives from the Department of the Environment, the Emergency Measures Organization, other appropriate provincial agencies, municipal governments, and the local fire services to examine and make recommendations respecting the role and mandate of the local fire service in responding to emergencies involving dangerous goods and hazardous wastes.

Recommendation 14
Training and Equipment
The Minister of the Environment should instruct the Working Group established as a result of Recommendation 13, to examine and make recommendations respecting the equipment and training needs of local fire services. The need for equipment and training must be based on the role which is defined for the fire services.

The Working Group must take into consideration the volunteer nature of most local fire services in Nova Scotia and evaluate the role and responsibilities of various agencies and the chain of command in emergency response situations.

Recommendation 15
Provincial Emergency Response Team
The Minister of the Environment should establish a well-trained and equipped emergency Response Team to coordinate provincial responses to dangerous goods and hazardous wastes

emergencies. The Response Team should act in support of local response initiatives. The Response Team should be responsible for providing training programs and for acquiring access to provincial and local resources that may be required in dangerous goods and hazardous wastes emergencies.

Recommendation 16
Requirement To File Inventories
The Minister of the Environment should require all persons using or generating dangerous goods or hazardous wastes to file an inventory, and material safety data sheets, with Municipal officials and the local fire service. The Minister should also require persons to update the inventory on a regular basis and to maintain a copy of the inventory on the site where dangerous goods of hazardous wastes are used or stored. This requirement should be stipulated as a regulation under the Dangerous Goods and Hazardous Wastes Management Act.

Recommendation 17
Posting of Buildings
The Minister of the Environment should adopt a regulation under the Dangerous Goods and Hazardous Wastes Management Act requiring persons storing dangerous goods and hazardous wastes to erect a sign, approved by the Minister, indicating that dangerous goods and hazardous wastes are stored on the premises.

The system should be similar to that adopted under the Dangerous Goods Transportation Act.

Recommendation 18
Reporting Spills and Emergencies
The Minister of the Environment should adopt a regulation under the Dangerous Goods and Hazardous Wastes Management Act requiring persons responsible for dangerous goods and hazardous wastes to notify designated emergency response personnel in the event of a spill or the release of dangerous goods or hazardous wastes.

The Minister should adopt a policy that would require public notification in the event of a spill or the release of dangerous goods or hazardous wastes into a public area.

Recommendation 19
Evaluating Emergency Responses
The Minister of the Environment should require that an evaluation is performed of the emergency response when dangerous goods or hazardous wastes could be or are released into public areas. The results of this evaluation should be made publicly available.

LICENCING OF PERSONS RESPONSIBLE FOR HANDLING HAZARDOUS WASTES

Recommendation 20
Licencing
The Minister of the Environment should require persons generating, transporting or responsible for disposing of a hazardous waste to be licenced. The terms and conditions of the licence must establish the type and quantity of waste, and special precautions that must be taken in handling the waste and the approved means for disposing of the waste. Licences must not be transferable.

Recommendation 21
Training of Employees
The Minister of the Environment should ensure that all persons holding a licence provide training, acceptable to the Minister, for their employees consistent with the terms and conditions of the licence.

Recommendation 22
Environmental Liability Insurance and Financial Assurance
The Minister of the Environment should require applicants for a licence to have reasonable insurance or to provide proof of financial assurance, acceptable to the Minister.

STORAGE OF DANGEROUS GOODS AND HAZARDOUS WASTES

Recommendation 23
Prohibition on Storage in Excess of One Year
The Minister of the Environment should adopt regulations under the Dangerous Goods and Hazardous Wastes Management Act to prohibit the storage of hazardous wastes for a period in excess of one year. Persons storing wastes should be required after this one year period to ship wastes to an approved disposal facility. This provision should not apply to the existing secure storage of PCB's.

Recommendation 24
Storage Regulations
The Minister of the Environment should adopt regulations under the Dangerous Goods and Hazardous Wastes Management Act which among other things specify the types of containers which are permissable for the storage of the wastes, the facilities which are to be provided by generators for the temporary storage of their wastes, security for storage facilities at generator sites, and training for persons with access to the storage facilities.

TRANSPORTATION OF HAZARDOUS WASTES

Recommendation 25
Manifests for Transportation of Hazardous Wastes
The Minister of the Environment should provide the resources for the full implementation and development of a provincial hazardous wastes manifest system, similar to the Federal process. Transporters of hazardous wastes should be required to submit a manifest to the Department of the Environment for the shipment of wastes.

ENFORCEMENT AND PENALTIES

Recommendation 26
Enforcement and Penalties
The Minister of the Environment should ensure that regulations under the Dangerous Goods and Hazardous Wastes Management Act are stringently and fairly applied.

The Minister should periodically examine the penalty provisions of the Act to ensure that they provide an appropriate incentive for promoting acceptable managment practices.

PUBLIC EDUCATION AND CONSULTATION

Recommendation 27
Establishment of a Public Affairs Section
The Minister of the Environment should establish within the Department a section of qualified and experienced individuals with responsibility for public education, public relations and public consultation. This section should be responsible for managing the Department's external relations, the preparation and distribution of educational materials and for organizing public consultation programs on dangerous goods and hazardous wastes and all other environmental issues.

The Minister should adopt as a general policy the public's right to know about hazardous situations which could affect them.

Recommendation 28
Industrial Information Programs
The Minister of the Environment should require industry to make available to the public information regarding spills or accidents that may affect the public.

The Minister of the Environment should encourage industry to undertake public information programs.

REUSE, REDUCTION, RECYCLING AND RECOVERY

Recommendation 29
Promoting the 4 R's
The Minister of the Environment should consider the potential for encouraging reuse and

recycling when developing regulations for dangerous goods and hazardous wastes.

The Minister should consult with industries that generate hazardous wastes, or are interested in the recovery of hazardous wastes, when developing regulations.

PUBLIC INSTITUTIONS

Recommendation 30
Inventories for Schools, Universities and Hospitals
The Ministers of Education and Health should require local school boards, universities and hospitals to prepare inventories of dangerous goods and file these with local fire officials. Inventories should identify the location of dangerous goods which are stored within these institutions.

Recommendation 31
New Schools and Storage of Dangerous Goods
The Minister of Education should ensure that new schools provide adequate storage for dangerous goods. The Minister should assess the adequacy of storage facilities in existing schools and require the necessary improvements.

Recommendation 32
Collection of Hazardous Wastes from Schools
The Minister of Education should require each School Board to investigate the feasibility of a hazardous wastes collection system for schools under their jurisdiction and the Board should make appropriate arrangements for disposal.

Recommendation 33
Storage and Disposal Guidelines
The Ministers of Education and Environment should prepare guidelines for the storage and disposal of dangerous goods and hazardous wastes in schools.

Recommendation 34
Training
The Minister of Education should investigate the adequacy of in-service training for school laboratory instructors. The Minister of Education should examine the extent to which the current curriculum addresses the issue of hazardous waste management and how the curriculum can be improved in this area.

Recommenation 35
Universities and Disposal of Hazardous Wastes
Universities in Nova Scotia should establish management systems in their laboratories, and elsewhere in the university, for the collection and disposal of hazardous wastes.

Each university should appoint a coordinator for hazardous waste management to ensure the establishment and operation of an effective management system.

Recommendation 36
Hospitals and Hazardous Waste Disposal
The Minister of Health should instruct the provincial committee which was established by the Department of Health for examining hospital hazardous waste management, to investigate the adequacy and effectiveness of incineration facilities.

The Ministers of Health and Environment should develop guidelines for the operation of hospital incinerators to ensure their safe operation.

Recommendation 37
Hospital Coordinators
The Minister of Health should ensure that hospitals appoint a coordinator for dangerous goods and hazardous waste management with responsibility for developing a management

plan for dangerous goods and hazardous wastes.

The Ministers of Health and Environment should assist these coordinators in developing hospital waste management plans.

WASTE OIL

Recommendation 39
Regulations
The Minister of the Environment should adopt regulations under the Dangerous Goods and Hazardous Wastes Management Act to control the use and disposal of waste oil and contaminated waste oil.

The regulations should specify allowable limits of contaminants for the burning of waste oil in prescribed boilers.

Recommendation 40
Testing Procedures
The Minister of the Environment should require product testing of waste oil to ensure that it meets the regulated standards.

Recommendation 41
Imported Waste Oil
The Minister should prohibit the importation of contaminated waste oil into Nova Scotia unless the shipper has received approval from the Minister.

Recommendation 42
Dilution of Contaminated Waste Oil
The Minister of the Environment should prohibit the dilution of contaminated waste oil as a means of meeting regulated standards.

Recommendation 43
Road Oiling
The Minister of the Environment should prohibit the use of waste oil as a dust suppressant on roads.

ABANDONED WASTE SITES

Recommendation 44
Release of Phase I Study
The Minister of the Environment should publicly release the Abandoned Land Waste Disposal Site Study (Phase I) and make staff available to discuss and explain the study with those interested.

Recommendation 45
Phase II of Study
The Minister of the Environment should initiate Phase II of the Abandoned Land Waste Disposal Site Study. Based on the results of these preliminary investigations, mitigative measures, if necessary, should be undertaken. During all phases, the public must be kept fully informed.

THE ROLE OF MUNICIPAL GOVERNMENTS

Recommendation 46
Provincial Land Use Policies
The Minister of Municipal Affairs and the Minister of the Environment should examine the advantages of adopting a provincial land use policy for dangerous goods and hazardous wastes as a mechanism for ensuring the improved control of these substances.

Recommendation 47
Informing Municipalities
The Minister of the Environment, in approving any work or undertaking that would involve dangerous goods and hazardous wastes should require that the appropriate municipal government be informed of the procedures being put in place to ensure the effective management of dangerous goods and hazardous wastes.

Recommendation 48
Siting Facilities
The Minister of the Environment should ensure that municipal governments are fully consulted early in the process for siting any central facility for managing hazardous wastes.

DEPARTMENT OF THE ENVIRONMENT

Recommendation 49
Coordinator for Dangerous Goods and Hazardous Wastes
The Minister of the Environment should assign a coordinator for dangerous goods and hazardous wastes management. This position should be responsible for managing the various dangerous goods and hazardous waste management activities of the Department. This position must be provided with the manpower and resources sufficient to meet its mandate.

TASK FORCE

Recommendation 50
Public Release of Task Force Report
The Minister of the Environment should release the Report of the Minister's Task Force on Hazardous Waste Management. Copies of the Report should be made availabe to persons who indicated an interest in the Task Force and its proceedings. The report should be distributed to all libraries in the Province.

Recommendation 51
Public Comments
The Minister of the Environment should establish a process that provides the opportunity for the public to comment on the Report of the Task Force and should incorporate these comments, with the recommendations of the Task Force, when developing and implementing a dangerous goods and hazardous waste strategy for Nova Scotia.

INTRODUCTION

1.1 APPOINTMENT OF THE TASK FORCE

The Task Force on Hazardous Waste Management was appointed in June 1985 by the Minister of the Environment with representation from the Nova Scotia Environmental Control Council and the Nova Scotia Department of the Environment. According to the Terms of Reference, the purpose of the Task Force is to "examine the hazardous waste management problem in Nova Scotia and to file an action plan to deal with it". The Terms of Reference for the Task Force are included as Appendix A.

The Task Force's activities were organized in two phases. In Phase I, the Task Force was required to identify existing hazardous waste management problems and issues requiring resolution; management options for addressing hazardous waste issues in Nova Scotia; local, regional and national initiatives which have been developed for managing hazardous wastes; and, requirements for public consultation. The purpose of Phase II was to determine what Nova Scotians perceive as the major dangerous goods and hazardous waste management issues and how they should be addressed, and to prepare a strategy that would be considered by government for managing these issues.

1.2 PHASE I REPORT: A PROPOSAL TO DEVELOP A COMPREHENSIVE PLAN

The Task Force completed its Phase I activities in the autumn of 1985 and submitted its report to the Minister of the Environment. In its Phase I Report, the Task Force reached six major conclusions:

1 Not all wastes currently generated in the province are being adequately handled. For some hazardous wastes, there are no acceptable handling facilities available in Nova Scotia.

2 The management of hazardous wastes and dangerous chemicals are interrelated. Improper use, handling and storage of a dangerous chemical can have the same impact as a hazardous waste.

3 For some plants, industries and areas of the Province, information on the types, volumes and sources of hazardous waste is sufficient to initiate programs for improving current management practices. However, sufficiently detailed information is not available to allow for reliable identification and assessment of provincial waste management options. There is no reliable information on the types, volumes and users of dangerous chemicals and no reliable information on small generators of hazardous wastes.

4 There is considerable public confusion over the dangerous chemicals and hazardous waste issues and the options available for managing these issues. Public consultation activities to date have been sporadic. Recent incidents both in Nova Scotia and elsewhere have demonstrated that:

   a The general public will accept that an accidental discharge has occurred and corrective action taken – if they are informed.

   b Industries, especially small business operators, are not always aware of the impact of the materials they use nor do they have easy access to appropriate disposal methods.

   c The public is looking to government to provide for the proper management of dangerous goods and hazardous wastes.

5 Improved dangerous chemicals and hazardous waste management will require the cooperation of the public, industry and governments at all levels.

6 Dangerous chemicals/hazardous waste management legislation and administrative practice is deficient. This deficiency has detracted from the priority that should be given this issue.

Based on these major conclusions, the Task Force presented to the Minister two broad options for addressing the hazardous waste management problem in Nova Scotia. On the advice of the Task Force, the first option, incremental adaptation to problems as they emerged, was rejected by the Minister. Instead the Minister chose the second option which called

for the establishment of a process that would enable the Task Force to develop for the Minister's consideration a comprehensive plan to manage dangerous goods and hazardous wastes.

According to the Task Force's Phase I Report, the comprehensive plan should address:

- requirements for upgrading existing waste management practices;
- the need for provincial facilities and the financial, legal and socio-economic issues associated with these facilities;
- opportunities for out-of-province treatment; and
- opportunities for reuse and recycling.

To reflect the concerns of businesses and individuals who would be affected by a comprehensive management plan, it was recommended to the Minister that the Task Force be expanded to include representatives of industry, municipal governments and environmental interest groups. Finally, the Task Force suggested that the planning process include a public education and consultation program.

In response to the Phase I Report, the Minister instructed the Task Force to initiate a second phase and to undertake extensive public consultations that would lead to the development of a comprehensive strategy. Phase II activities are described in Section 2.1 of this report.

1.3 PHASE I: INTERIM RECOMMENDATIONS

In addition to its recommendations on a process for developing a comprehensive strategy, the Task Force recommended several interim measures that could be implemented immediately to improve hazardous waste and dangerous goods management in Nova Scotia. Interim recommendations were filed on: the Regulatory and Administrative Regime, Inventories, Current Handling Practices, Interdepartmental and Intergovernmental Liaison, and Public Consultation. The Task Force's interim recommendations are included as Appendix B.

Potentially the most far reaching of these interim recommendations was the Task Force's proposal that the Province adopt enabling legislation for the control and management of dangerous goods and hazardous wastes. It was also proposed that regulations to administer the Act should be developed in consultation with industry and other interested publics.

The Dangerous Goods and Hazardous Wastes Management Act, which was passed by the Legislature and proclaimed in 1986, was a tangible response by the Government to the Task Force's recommendation on legislation. Regulations under this Act will be recommended by the Task Force as part of this Phase II Report.

The Task Force also recommended the appointment of a coordinator to manage the various activities within the Department for dangerous goods and hazardous waste management. The Minister has accepted this recommendation and it will be implemented as part of an overall Departmental reorganization of responsibilities. Notwithstanding this commitment, the Task Force re-emphasizes the need for the appointment of a coordinator to occur as soon as possible.

In Phase I, the Task Force recommended a Province-wide inventory of hazardous wastes. Following the submission of its Phase I Report, the Minister of the Environment received the Porter Dillon, *Special Waste Management Study for the Halifax-Dartmouth Metropolitan Area*. This study, which was funded by the Province and the Federal Government, adds significantly to the existing data base since the Metro area is the major source of hazardous waste in Nova Scotia. Nevertheless, the Task Force will make further recommendations for a Province-wide inventory in this Report.

Although it recognizes that existing inventory data is deficient, the Task Force indicated to the Minister that considerable knowledge is already available on the major generators of hazardous wastes in the Province. Therefore, the Task Force recommended that these

generators be given priority consideration by the Department of the Environment in assigning the Department's limited monitoring resources to ensure that their waste management practices are improved.

The Task Force also recommended implementation of a manifest system for the intra-provincial transportation and disposal of hazardous wastes. Limited progress has been made in this regard. Full implementation of this recommendation, however, is highly dependent on assigning the necessary resources that will give priority to the regulation of major generators and the development of a manifest system. In particular, the Task Force's recommendation regarding the appointment of a dangerous goods and hazardous waste coordinator is highly relevant to achieving advances in this area.

The lack of accurate information specific to Nova Scotia on dangerous goods and hazardous waste management was identified by the Task Force as one area requiring attention by the Minister of the Environment. To some extent, this situation is being addressed by the activities of the Task Force and the support it has received from the Minister to publish materials. There is a need, however, to continue and increase the flow of information both as a means of assisting individuals in managing their specific problems and to promote greater public understanding of this issue.

PHASE II
OBJECTIVES AND METHODOLOGY

2.1 PHASE II - OBJECTIVES

In accepting the recommendation of the Task Force to begin development of a comprehensive management plan for both dangerous goods and hazardous wastes, the Minister instructed the Task Force to consult with business leaders, municipalities, professional associations, waste haulers, researchers, academics, consultants and any other organization or individual that is interested in, or would be affected by adoption of, a comprehensive management plan. To ensure that it had broad representation, the Minister reconstituted the Task Force to include representatives of industry, municipalities and environmental interest groups (See Appendix C).

It is important to recognize that in seeking public input neither the Minister, nor the Task Force, had a management plan they wanted the public to endorse. The purpose of Phase II is to determine what Nova Scotians from all sectors perceive as the important dangerous goods and hazardous waste management issues, how they should be addressed, and the roles of governments, industry and individuals in addressing them. Therefore, it was the Minister's intention that the plan should emerge from discussions between the Task Force and Nova Scotians.

2.2 METHODOLOGY

Before it began the public consultation process, the Task Force distributed two documents to business leaders, schools, community and professional associations, municipalities, members of the media and many other groups and individuals. The first document was a pamphlet on the Task Force and its mandate (Appendix D). Over 6,000 pamphlets were distributed. Included as part of the pamphlet was a business reply card. Interested persons could use the card to indicate their interest in making a submission to the Task Force or in receiving further information.

The Task Force also produced and distributed a Background Report on Hazardous Wastes in Nova Scotia. The purpose of this document was to develop a basic understanding of the nature and scope of the problem.

Prior to each public session, the Task Force placed a notice in local newspapers indicating where and when meetings were to be held. Local media were notified of the meetings and given the opportunity to talk with the Task Force. Individuals who had submitted a business reply care were contacted to determine whether they would be interested in making submissions or attending sessions. Other persons who the Task Force felt might provide useful information were contacted prior to each session. Members of the Legislature and all municipal councils were notified of sessions being held in their regions.

The Task Force received 107 written and oral submissions during public sessions held in 10 locations throughout the Province between September and December of 1986. A list of presenters is included as Appendix E. The location and date of Task Force meetings is provided in Appendix F.

The Task Force visited Dartmouth on two separate occasions. Some citizens and public officials in Dartmouth felt that insufficient public notice was given of the Task Force's first meeting in that City. Therefore, an additional meeting was held for Dartmouth residents.

Unfortunately, a planned session in the Town of Digby had to be cancelled because of snow.

The first part of each public session was devoted to a one hour briefing session for local media. These sessions provided an opportunity to describe the mandate of the Task Force, the types of submissions it was receiving and to answer questions from the media. These were followed by the Task Force receiving written and oral submissions. Generally, one hour was scheduled for each presenter. This ususally consisted of a 15 minute presentation allowing approximately 45 minutes for questions and discussion. Although presentations

were scheduled, sessions were open to the public and the media. The Chairman generally permitted a short break between each presentation to allow members of the media to interview those who made presentations or to discuss the points which had been raised with individual Task Force Members.

Evening sessions were also held in all of the locations where the Task Force met. These were attended primarily by members of the general public who wished to raise a specific, local concern or were interested in the activities of the Task Force. There was no formal agenda or time limit for these evening sessions.

DANGEROUS GOODS AND HAZARDOUS WASTES IN NOVA SCOTIA

3.1 HAZARDOUS WASTES: SOURCES, VOLUMES, TYPES AND DISPOSAL METHODS

The Phase I Report of the Task Force summarized available information on the sources, volumes and types of hazardous waste and the current methods for disposing of them in Nova Scotia. This information is based on two sources: the *Maritime Hazardous Waste Inventory Report (1981)* and the *Canadian Inventory of Hazardous Wastes (1982)*.

Both of these reports were prepared in the early 1980's. Since that time there has not been an inventory of hazardous waste generated on a Province-wide basis. The *Halifax-Dartmouth Metropolitan Area Special Waste Management Study* which was undertaken in 1986 and released after the completion of the Task Force's first report provides information on this region of the Province.

Although the inventory data is available in its Phase I Report the Task Force believes that it is important to repeat this information to ensure a common understanding of the situation in Nova Scotia. A summary of the data presented in the *Halifax-Dartmouth Metropolitan Area Special Waste Management Study* is also included.

It is difficult to state with any degree of accuracy just how much hazardous waste is generated in Nova Scotia. *The Maritime Hazardous Waste Inventory Report (1981)* estimated the volume produced in Nova Scotia at 52 450 tonnes. This is in contrast to the 106 857 tonnes estimated by the *Canadian Inventory of Hazardous Wastes (1982)*. The discrepancy between the two inventories is particularly significant in the chemical industrial sector. The *Maritime Hazardous Waste Inventory (1981)* estimated production by this sector at 20 455 tonnes while the *Canadian Inventory of Hazardous Wastes* suggests that the generation rate could be closer to 69 000 tonnes.

Nova Scotia is ranked fifth among the Provinces and Territories in Canada for producing hazardous wastes. Table I provides a list of provinces and territories with the contribution of each to the total volume generated in Canada.

TABLE I

Hazardous Waste Volumes Produced by Provinces and Territories in Canada

(Canadian Inventory of Hazardous Wastes, 1982)

Province	Tonnes	Percentage
1. Ontario	1 605 107	49
2. Quebec	951 917	29
3. British Columbia	273 425	8
4. Alberta	215 944	7
5. Nova Scotia	106 857	3
6. New Brunswick	46 885	1
7. Saskatchewan	30 144	1
8. Manitoba	29 458	1
9. Newfoundland	20 719	1
10. Prince Edward Island	406	1
11. Yukon	1	1
12. Northwest Territories	0	0
Total	3 280 863	

According to the *Maritime Hazardous Waste Inventory Report (1981)* there are approximately 216 potential industrial hazardous waste generators in Nova Scotia. The industrial sectors that are primarily responsible for hazardous wastes are: the petroleum and coal products industries (oily wastes), the chemical industries (acid wastes) and the pulp industries (alkali wastes). Other industrial sectors that contribute to the hazardous wastes stream include: non-metallic minerals, textile, rubber, electrical, metal fabricating and transport industries.

Companies surveyed for the *Maritime Hazardous Waste Inventory Report (1981)* employ a variety of methods for treating or handling their hazardous wastes. These include settling ponds, landfarming, landfilling, recycling, incineration, sewerage and on-site treatment. Some companies also store and stockpile their wastes, while a few ship their wastes to out-of-province facilities.

The *Maritime Hazardous Waste Inventory Report (1981)* estimated that 38 percent of the hazardous wastes generated in Nova Scotia were treated or handled in an acceptable manner. The majority of hazardous wastes, 62 percent, are not acceptably treated or handled. Table II depicts the waste treatment practices followed in Nova Scotia and assesses their acceptability and unacceptability.

TABLE II

Waste Disposal Methods of Inventories Companies in Nova Scotia
(Maritime Hazardous Waste Inventory Report, 1981)

Method	**Acceptable/Unacceptable** (Tonnes)	
1. Lagoon/Settling Pond	0	15 547
2. Landfarming	9 947	0
3. Landfill/Dumps	3 096	1 915
4. Storage	62	626
5. Stockpile	0	195
6. Recycle	228	0
7. Incineration	240	14
8. On-Site Treatment	56	10
9. Sewerage	0	28
10. Out-of-Province Disposal	unknown	unknown
Nova Scotia	38%	38%

The *Maritime Hazardous Waste Inventory Report (1981)* suggested that a continuation of existing acceptable management practices, combined with modifications to existing techniques and the implementation of reuse and recycling programs, could potentially reduce the quantity of wastes receiving unacceptable management to 4 227 tonnes, or 8 percent of the estimated annual total for the Province. To be managed effectively, the remaining 4 227 tonnes would require treatment at a specialized facility. The four broad categories of options considered in the *Maritime Hazardous Wastes Report (1981)* and their effectiveness in managing hazardous wastes are summarized in Table III.

TABLE III

Waste Management Options for Nova Scotia
(Maritime Hazardous Waste Inventory Report, 1981)

Options	Tonnes	%	Cumulative %
1. Continue Existing Methods	19 931	38	38
2. Upgrade Facilities	26 666	51	89
3. Reuse/Recycle	1 626	3	92
4. Special Treatment/Facility	4 227	8	100

According to the *Maritime Hazardous Waste Inventory*, 52 percent of the 4 227 tonnes requiring specialized treatment originated from Halifax County Richmond County contributed 20 percent, while Cape Breton, Pictou and Colchester were each responsible for 6 percent. The remaining counties produce relatively small or no quantities of hazardous wastes requiring specialized treatment. In 1987, Richmond County's contribution is likely significantly less following the closure of the Atomic Energy of Canada Limited heavy water plant and the Gulf Oil Refinery.

3.2 HALIFAX-DARTMOUTH METROPOLITAN AREA, SPECIAL WASTE MANAGEMENT STUDY

In 1984, the Nova Scotia Department of the Environment and Environment Canada funded a proposal by Porter Dillon Limited of Halifax to inventory sources and types of special wastes generated in the Halifax-Dartmouth Metropolitan Area and to provide the basis for development of a special waste management strategy. Special wastes were defined in the Halifax-Dartmouth Metropolitan Area Special Waste Management Study as wastes produced by an industry or institution which have special treatment requirements, or pose a threat to man, animals, or the environment if not disposed of by approved methods.

In preparing their Study, Porter Dillon Limited identified 500 companies and institutions in the Halifax-Dartmouth area which could produce "special wastes". Based on surveys and interviews with more than 200 of these, the Study Team concluded that:

1. Approximately 22 800 tonnes per annum of special wastes are generated in the Metropolitan Area. Of this amount, 4 056 tones of wastes are disposed of inappropriately by existing methods.
2. Of the 4 056 tonnes of special wastes, approximately 2 975 tonnes could be disposed of by improved industrial rinse water handling methods.
3. The remaining 1 081 tonnes of special wastes would require disposal through a management system.

Because of a lack of response or a lack of organization within some institutions and firms, the Porter Dillon Limited Study Team was unable to inventory the special wastes and disposal methods of waste haulers, hospitals, power generating utilities, universities and the specialty chemical industry. Presumably, the waste generated by these sectors would increase the volume of waste requiring specialized treatment.

3.3 SMALL SCALE COMMERCIAL GENERATORS

Neither the *Maritime Hazardous Waste Inventory Report (1981)* nor the *Canadian Hazardous Waste Inventory* (1982) provides detailed information on small-scale hazardous waste generators such as furniture refinishers, photo processors and many others. Although these sources may not generate significant quantities of hazardous wastes on an individual basis, their collective impact on the environment may be significant. These sources are dispersed throughout the Province.

3.4 INSTITUTIONAL HAZARDOUS WASTES

Schools, universities, hospitals and other public institutions produce hazardous wastes. However, there is no inventory of how much waste is generated from these sources or how acceptable their current disposal methods are.

3.5 HOUSEHOLD HAZARDOUS WASTES

Householders produce a variety of hazardous wastes including pesticides, wood preservatives, waste oils, paints and solvents, and cleaning products. There is no accurate information on hazardous wastes that are produced by householders. Currently, most of these wastes are disposed of in the sewer system or at local landfills. Not all of these wastes require treatment at specialized facilities.

3.6 DANGEROUS GOODS

There is no accurate information on the volume of dangerous chemicals used in the Province, where they are used, and how they are stored. It is known, however, that there are thousands of man-made chemicals in use today and that several hundred new chemicals are introduced worldwide per year.

PUBLIC RECOMMENDATIONS FOR THE MANAGEMENT OF DANGEROUS GOODS AND HAZARDOUS WASTES IN NOVA SCOTIA

4.1 MANAGEMENT BASED ON COMPREHENSIVE PROVINCIAL STRATEGY

Nova Scotians believe there is a need for the Province to implement a comprehensive strategy to manage dangerous goods and hazardous wastes. A comprehensive strategy must address:

- *the use and storage of dangerous goods,*
- *the generation of hazardous wastes,*
- *the transportation of dangerous goods and hazardous wastes,*
- *the storage, treatment and disposal of hazardous wastes,*
- *the emergency response capability of government and industry, and*
- *the reduction and reuse of dangerous goods and hazardous wastes.*

To provide the necessary degree of control over these elements of dangerous goods and hazardous waste management, Nova Scotians believe that the Province must develop and encourage the development of facilities, regulations, education and training programs.

The necessity for a comprehensive strategy that clearly specifies the role and responsibility of generators, transporters, waste handlers and government agencies was emphasized throughout the Task Force meetings. For example, in their submission the Dartmouth Chamber of Commerce indicated both the need for a strategy as well as the elements that should be addressed in the strategy. The Chamber stated:

> We require a management program to regulate and control the generation, handling, transfer and disposal/destruction of hazardous wastes. The Province of Nova Scotia should:
>
> a educate the public and business community that hazardous wastes are an integral part of our society;
>
> b control the problem by reducing the generation of the wastes and improving the recovery of usable materials from such wastes;
>
> c promote the proper management of hazardous wastes through the enforcement of regulations which penalize unacceptable disposal practices; and
>
> d provide facilities for the proper transfer and disposal/destruction of such wastes.

According to the Chamber, the Province should establish goals, define responsibility for achieving these goals and set forth a timetable for meeting them. This timetable is critical if the public is to be assured that action is being taken on these issues.

Warden Arthur MacKenzie, representing the Municipality of the County of Halifax, expressed his concern that the process of managing dangerous goods and hazardous wastes would begin, and end, with the siting of facilities and that the other necessary elements of any strategy would be ignored or forgotten. Consequently, the effectiveness of the facility, and the ultimate control of dangerous goods and hazardous wastes, would be diminished.

According to representatives of Tricil Limited, an Ontario-based hazardous waste management corporation, there is a requirement for basic legislation and regulation to establish a framework for a management system. This legislative and regulatory framework, including licencing systems, is a prerequisite for any future development of management facilities. Tricil suggested that the consideration of any facilities at this time would be premature. They went on to suggest:

> We first need an indication that there is a commitment from the Province to provide the legislative environment and regulatory climate in which waste management facilities would be sited. This means that the Government must have in place regulatory frameworks which at least encourage, if not specifically require hazardous wastes to receive appropriate treatment. This climate will ensure that a commercial facility is not forced to compete with other uncontrolled outlets.

It is important, therefore, that the strategy for managing dangerous goods and hazardous wastes be defined and that it is sufficiently comprehensive to include all of the elements involved in the production, transportation, reduction and disposal of dangerous goods and hazardous wastes. Tricil Limited and others suggested that in addition to legislation, there must be an accurate inventory of the type and quantity of hazardous wastes that could potentially be handled at a management facility.

4.2 THE ROLE OF GOVERNMENTS

The role of the Province in providing the framework for managing dangerous goods and hazardous wastes is critical. According to both the Town of Amherst and the Municipality of the County of Cumberland, the Province will be required to demonstrate a significant level of political leadership both in formulating a strategy and in ensuring its implementation. According to those who met with the Task Force, the Department of the Environment must be given the priority and resources that are necessary to ensure that the Province can take the leadership role that is required. The Town of Amherst and the Amherst Area Industrial Commission stated in their brief:

> We need a stronger Department of Environment to support our municipalities and other industries. . . . Our Department of Environment must be given a much higher priority by the Government of Nova Scotia so they can give this Province the leadership we deserve on environmental issues such as hazardous waste management.

This view was supported by Mr. Gerry Isenor of Porter Dillon Limited, the firm which was responsible for the *Halifax-Dartmouth Metropolitan Area Special Waste Management Study*. The availability of resources, and the need for leadership was also emphasized by the Land Resources Coordinating Council of the Voluntary Planning Board (Hazardous Waste Management Sub-Committee) which recommended:

> A leadership role is essential in coming to grips with this complex issue. The Provincial Department of Environment should clearly take the leadership role in developing and ultimately enforcing the regulations and guidelines which will be required for environmentally acceptable management strategies for dangerous goods and hazardous wastes in Nova Scotia. This leadership role will be meaningful only if the Department of Environment commits adequate funding and manpower to the management system. It will be further enhanced as the Department shows good faith in addressing other related waste management issues, such as municipal waste disposal and abandoned waste site assessment.

Provincial leadership in the management of dangerous goods and hazardous wastes does not preclude the private sector or other levels of government from assuming a role within any comprehensive strategy adopted by the Province. In fact, as the Task Force was informed, the Province must, in developing a strategy, consider the role that could and should be played by the private sector and other levels of government. The Canadian Manufacturer's Association suggested, for example, that:

> The responsibility for dealing with hazardous waste should individually or collectively be the prime responsibility of those producing the waste. The role of government should be to oversee that hazardous waste is being dealt with safely, to collaborate with industry to assure there are facilities available (either within the province or elsewhere) which can effectively deal with the waste and to assure that the waste can be transported in a safe manner.

Other groups, such as the Nova Scotia Gasoline Retailers Association, explained the measures their members have introduced to ensure that they are meeting their responsibility for managing dangerous goods and hazardous wastes. While most groups, including industry, indicated that the generator of a hazardous waste has primary responsibility for its safe handling, they also felt that this responsibility must be exercised within a comprehensive strategy established by the Province and the Department of the Environment. Representatives of Texaco Canada Limited stated, for example, that their company "views protection of our environment as a fundamental responsibility of our business operations". They went on to suggest, however, that their task would be made easier by "the Nova Scotia Department of the Environment being prepared to take the leadership role in the development and implementation of a provincial strategy".

Municipal governments have an interest in the safe handling of dangerous goods and hazardous wastes. Their ability to meet their responsibilities for land use and emergency planning and the provision of local services, such as water supply and waste disposal, could be affected by any provincial strategy for the management of dangerous goods and hazardous wastes.

While municipal governments indicated both an interest and a willingness to participate in the development and implementation of a strategy, they also clearly expressed their limitations in terms of resources, and jurisdictional authority, to address all of the aspects of the dangerous goods and hazardous waste management issue. The Municipality of the County of Halifax indicated that:

> Municipal units do not have the resources and authority to develop in-house standards and procedures to deal with this problem. However, with the support of provincial regulations and the assurance of their enforcement, municipalities could do much to improve public awareness and to identify individual and cumulative hazards within their jurisdictions.

Several presenters indicated that municipal governments, because of their existing responsibilities and awareness of local issues, are best suited to providing various services in the area of dangerous goods and hazardous waste management. For example, as the City of Dartmouth suggested, municipal by-laws for sewer systems could be adopted to control hazardous wastes that are disposed of in sewers. But as the Task Force was repeatedly reminded, the municipal role must be shaped by provincial standards and the availability of, or access to, technical expertise.

Two principal roles were identified for municipal governments in developing and implementing a comprehensive strategy: information gathering and dissemination and land use regulation as a mechanism for controlling developments which use and generate dangerous goods or hazardous wastes. With respect to the necessity for a role in information gathering and distribution, the Town of Truro indicated its concern for the various factories and firms in its jurisdiction using and storing dangerous goods and hazardous waste. Within its jurisdiction, Mayor Douglas Carter suggested:

> Close liaison with industrial plants is needed to ensure that personnel are trained to respond to spills and other accidents in order to prevent civic disaster. This information must be communicated to Town officials, not only by the users, but also by the suppliers. At the present time, the municipalities have no jurisdiction over suppliers and, in most cases, over users of hazardous materials. There is presently a total lack of authority on the part of the municipalities to deal effectively with these problems. The Town has no legislative right to the knowledge of the material. The Town has neither the authority nor the financial resources to develop the expertise required to handle industrial waste and hazardous materials.
>
> This lack of knowledge and jurisdiction impacts on both the question of fire fighting and, more generally, on the question of industrial uses of hazardous materials. We ask that the Task Force address particularly the legislative deficiencies as they concern these two subjects.

The application of land use planning mechanisms as a means of minimizing the hazards to the public and property were mentioned to the Task Force as an important function that could be played by municipal governments. Richard Spanick, a planner in Pictou, indicated to the Task Force:

> The focus on hazardous wastes in recent years has been on identifying and being able to neutralize such substances. We believe that there is a comparable need to begin to identify and classify those businesses and other uses which as part of their operations may utilize hazardous wastes. The simple expedient of identifying land uses by the nature of the use, on the assumption that the use is not a problem to its neighbours, is obviously no longer sufficient.

This view was also supported by the Nova Scotia Land Use Policy Committee which recommended that the Task Force investigate the potential for municipal planning strategies, guided by provincial land use policies, for controlling the handling of dangerous goods.

A strategy for managing dangerous goods or hazardous wastes in Nova Scotia can not ignore both the jurisdicitonal responsibilities of the Federal Government and the access to technical expertise which the Federal Government provides. At the same time, it cannot ignore developments or events in other jurisdictions in Canada that are developing standards and plans for the management of dangerous goods. Of particular importance to those presenting briefs was the need for national uniformity in setting standards and defining what constitutes a dangerous good or a hazardous waste. The Tusket River Environmental Protection Association was among those groups who recommended a uniform definition in order to avoid the possibility that a dangerous good or hazardous waste would be subject to less stringent controls in neighbouring jurisdictions and lead to the creation of pollution havens. Many companies, especially national companies such as Texaco Canada Limited, also see the need for a uniform national definition and regulations which would assist them in meeting governmental requirements.

4.3 PUBLIC EDUCATION AND PARTICIPATION

The public must be provided with extensive opportunities to participate in the formulation of any comprehensive strategy. Without exception, the need for public information and public involvement in dangerous goods and hazardous waste management decisions was emphasized by every presenter who met with the Task Force. The necessity for this was clearly expressed by Peggy Hope-Simpson during the Task Force's meeting in Kentville. She said:

> The complexity of the issues means, of course, that governments and Minister's Task Forces alone will not be able to bring in recommendations for regulations that will address these many aspects of the problems of toxic or harmful chemicals. . .
>
> I believe that government and task forces will only be effective in bringing about good legislation in this environmental area if a significant number of the public are involved in the process.

Several reasons were advanced for active public involvement in decisions on dangerous goods and hazardous goods wastes management. First, any strategy or plan for this policy area must address public needs and be acceptable to generators, waste haulers, waste disposal agencies, and members of the general public. Without participation by all of these groups, there can be no reasonable assurance that public needs have been addressed. The second reason for active public involvement is the general lack of public trust in governments. There is an increasing tendency in environmental affairs for the public to demand greater access to information on activities or events that may affect them. While this public "right-to-know" movement is in part a consequence of increased public interest in environmental issues, it also stems from a lack of public trust in government's capacity or willingness to deal with environmental issues. Joe Van Buskirk of New Glasgow, said:

> Industry and Government are both viewed with suspicion in this Country. Both have been and are seen as having reason to shade the facts in order to promote financial or political objectives which may conflict with sound environmental policy.

The Government of Nova Scotia received considerable praise for establishing the Minister's Task Force on Hazardous Waste Management. Many view this as an important first step in generating dialogue between those groups which will be required to form a partnership if the problems of dangerous goods and hazardous waste management are to be effectively managed. Many of these same groups which complimented the Government believe it is important for this dialogue to continue throughout the development of the strategy and implementation of plans.

Presenters were particularly concerned with the need for active public participation in any decision to site hazardous waste management facilities. Several suggestions were received for establishing a process that would provide adequate opportunities for public consultation and at the same time build public trust. The Nova Scotia Research Foundation Corporation told the Task Force:

> There is no question that the public in general have very serious concerns about the siting of a hazardous waste treatment facility in their neighbourhood. The NIMBY (Not In My Backyard) Syndrome is real and must be addressed in a serious, logical and non-emotional manner...

The Nova Scotia Research Foundation Corporation recommended that a task force, composed of representatives from government, industry and the public, be established to review the final report of the Minister's Task Force on Hazardous Waste Management. Assuming that there is a decision to proceed with waste management facilities, a team consisting of government and the public should be empowered to develop and implement a site selection process.

The Dartmouth Chamber of Commerce also saw the need for a clearly defined process of active and continuous public consultation during the development of management plans. They recommended that the Voluntary Planning Board be considered as a mechanism for ensuring, "broadly-based input from the private sector and public institutions..."

A common base of understanding with respect to the nature and scope of the dangerous goods and hazardous wastes management problem in Nova Scotia was seen as an important prerequisite for creating the public support, and hence the political will for action. Public education and public information that is timely, factual. understandable and perceived as being from trusted sources was recommended.

In its submission, the Land Resources Coordinating Council of the Voluntary Planning Board indicated a number of methods that government could use to communicate information on dangerous goods and hazardous waste management. According to Voluntary Planning:

> The Government should develop more effective means of information transfer in order to enhance the public's understanding of the complex management issues in Nova Scotia... We recommend that the Information Officer at the Department of the Environment have a key role in managing the development of more effective means of information transfer.

The importance of public education, at all levels, was also recommended by Linda Hupman, a councillor for the Municipality of Queens County. She said:

> What is an acceptable approch? What are hazardous wastes? I believe that the term hazardous waste encompasses a multitude of materials found all around us, in every household in some form or another and right on up to the most highly toxic industrial wastes, which is the kind most people think of when they talk about the subject. These materials all have varying degrees of toxicity and danger and so they require any number of different disposal methods and procedures. There is much to do in the area of public education and awareness to make people appreciative of the kinds of common products they use which deserve special care and attention when getting rid of excess amounts or empty containers.

In addition to general educational needs, however, there is a need for timely, accurate information during environmental emergencies, or where the potential for a risk exists. A fire in a warehouse storing dangerous goods and hazardous waste, a transportation spill of a dangerous good, the seepage of a hazardous waste into the groundwater; these are all situations which can alarm the public. As might have been expected, the need for public information in these situations was emphasized very strongly during the Task Force meetings in Kentville. With the Canning experience still fresh in their minds, many presenters raised this issue. The Town of Kentville said in their presentation, "Communications are a vital tool to any operation at the best of time, but when they are non-existent when dealing with a major concern, the results spell trouble".

In Sydney, Reverend Albert T. Maroun of the College of Cape Breton summarized both the need for and the benefits to be gained from education and information programs. He suggested that it is only through access to information on environmental risks that the public will consider the issue of dangerous goods and hazardous wastes management sufficiently important to demand action.

4.4 ELEMENTS OF A COMPREHENSIVE STRATEGY

Nova Scotians believe that there must be a comprehensive strategy in Nova Scotia for managing dangerous goods and hazardous wastes. This is required because, as presenters told the Task Force, Nova Scotians must be responsible for managing their own hazardous wastes. Further, they are of the opinion that hazardous wastes should not be generated in Nova Scotia unless there is an approved disposal method for these wastes.

Based on the presentations of Nova Scotians, the Task Force believes that a comprehensive strategy must consist of:

- A Definition For Dangerous Goods and Hazardous Wastes
- Facilities For the Management of Hazardous Wastes
- Emergency Response Capability
- Regulations and Procedures For the Transportation, Storage and Disposal of Dangerous Goods and Hazardous Wastes
- Programs For Abandoned Waste Sites
- Programs To Reduce, Reuse, Recover and Recycle Dangerous Goods and Hazardous Wastes

4.4.1 Defining Dangerous Goods and Hazardous Wastes

Very few presenters directly and specifically addressed how a definition of dangerous goods or hazardous wastes should be structured or the characteristics or criteria that should apply. It was recognized, however, that this is the priority element of any management strategy.

Many presenters noted that the current Dangerous Goods and Hazardous Wastes Management Act does not define these substances. Until definitions are developed, the Act has no power. Further, it will be impossible to prepare accurate inventories of dangerous goods or hazardous wastes.

With respect to a definition for hazardous wastes, the Ecology Action Centre told the Task Force that:

> . . . as broad a definition of hazardous or special wastes should be used so as to allow flexibility in managing the problem. Strict definitions or the use of criteria which limit the type of chemicals or products that might be managed might result in some materials "falling through the cracks". The apparent disagreement between federal and provincial agencies or between agencies at one level of government do nothing to enhance public confidence that bureaucrats and politicians are seriously addressing the problem. While federal and provincial agencies debated for two years what should be included in the definition, some 6,580,000 tonnes of wastes were produced in Canada.

Esso Petroleum Canada told the Task Force that a clear definition of hazardous wastes is needed because:

> Some relatively large volume wastes pose little or no hazard, but in the absence of clear definitions have been included in the hazardous category.

Texaco Canada in their submission emphasized the need for public consultation and the necessity for a definition to guide the determination of treatment and disposal options. Other presenters such as the Nova Scotia Department of Health and the Tusket River Environmental Protection Association suggested that any definition in Nova Scotia should conform with those adopted nationally, to minimize the impact on industry and to avoid creating pollution havens.

4.4.2 Facilities for the Management of Hazardous Wastes

There was general agreement among those who made presentations to the Task Force that facilities for the effective management of hazardous wastes are required. *Opinions differed, however, on what kinds of facilities are currently required and feasible; who should be responsible for their operation, and where and how they should be located.* The presentation of the Nova Scotia Research Foundation Corporation summarized most public attitudes towards the responsibility of Nova Scotians for ensuring that facilities are established. They stated in their brief:

> If one accepts that hazardous wastes in particular are generated as a result of the demands of today's society for a sophisticated and high-tech lifestyle, then one can argue that society should therefore be responsible for the management of these wastes as an additional cost of producing the particular goods/service. In addition, it would be a tremendous waste of scarce resources and loss of economies of scale if every industry producing hazardous wastes were responsible for building an on-site hazardous waste treatment facility. Every effort should be taken to reduce the amount of hazardous waste required for final treatment by a combination of recovery, recycling and reuse; however, there will be wastes produced that required special treatment disposal.

The Task Force heard from some presenters that Nova Scotians should develop fully integrated treatment and disposal systems. The arguments used to support the development of these systems are:

1 Existing intra-provincial disposal methods do not provide the level of safe management that can be provided at a fully integrated treatment facility.

2 Provincial and international borders may not remain open to the transportation of hazardous wastes.

3 An integrated treatment system might act as a catalyst for future industrial development.

4 The cost of using a fully integrated treatment system, with a requirement that it be used, might encourage some industries to reduce or recycle more dangerous goods and hazardous wastes.

The Task Force heard from two national companies that provide hazardous waste treatment and disposal services. In preparing their presentation, Sanexen International Incorporated, a waste disposal company, undertook a review of current inventory data and waste disposal practices in Nova Scotia and concluded:

> ... the estimated overall quantity of waste in need of special treatment can not justify the implementation of a full, large-scale treatment and elimination centre.

Instead of a fully integrated system, Sanexen proposed the establishment of a hazardous waste management transfer centre that would consolidate wastes, recycle some hazardous waste, and where possible, pre-condition some hazardous wastes. Hazardous wastes that could not be recycled would be stored awaiting their transport to a disposal facility.

Tricil Limited was also of the opinion that Nova Scotia could not justify fully integrated hazardous waste treatment facilities based upon the volumes of hazardous wastes currently generated in this Province. Tricil indicated that a Province-wide inventory of hazardous wastes would be required prior to selecting the most appropriate facilities for Nova Scotia.

The Halifax Board of Trade in their submission also indicated that the type of facilities provided should be based on the quantity of hazardous wastes produced:

> The Halifax Board of Trade notes that disposal/management of some hazardous waste products is already being carried out in Nova Scotia by private business, and believes these initiatives should be encouraged where economically viable.
>
> In the main, however, the Board recognizes that volumes may not be sufficient to warrant viable treatment and disposal facilities, and in such instances we recommend that a central collection facility be established to prepare hazardous waste for safe transshipment to the nearest treatment facility.
>
> In and when such volumes make local treatment economically viable, then treatment facilities should be added to the central collection facility.

At least two presenters proposed Action Plans for siting waste management facilities. The Dartmouth Chamber of Commerce proposed a Five-Year Action Plan to be developed by the Province, in consultation with the private and public sectors. During this five year period, the necessary regulatory and licencing systems would be established and a collection transfer facility constructed. Also, the province would initiate studies for the siting and establishment of waste treatment and disposal facilities.

Linda Hupman of Queens County also identified the need for a management plan for

dangerous goods and hazardous wastes. In her presentation, she emphasized many of the same elements which had been proposed by the Dartmouth Chamber of Commerce, but she also stated the need for a comprehensive inventory of hazardous wastes produced in the Province. It was her opinion that plans should be prepared on the basis of this inventory.

The Task Force heard from many groups and individuals on the criteria that should be used to select a site for any facilities to manage hazardous wastes. The Town of Truro suggested that any community chosen for a management facility, regardless of the services to be provided, would need to be assured that sufficient resources will be made available for the continued, safe disposal of hazardous wastes. The City of Dartmouth proposed that the:

1. Site should be away from existing or future residential areas.
2. Access to the site should be close to a major Expressway, adjacent to it, if possible.
3. Site should border on undevelopable land where possible.
4. Site should be buffered from residential areas by land height, and from industrial neighbours by vegetation or berms.

The Dartmouth Chamber of Commerce told the Task Force that:

> Prior to any decision being made on the establishment of a transfer facility, we urge that a detailed siting study be undertaken which should include at least the following criteria.
>
> - public participation program;
> - potential catchment area and population served;
> - accessibility and transportation;
> - socio-economic factors;
> - safety and security;
> - level and capability of emergency services (fire, police, hospitals, Emergency Measures Organization);
> - costing (construction and operation) factors;
> - land requirements;
> - geotechnical and hydrogeological factors; and
> - environmental factors.

All presenters who commented on the need for facilities stressed that the public must be an integral part of the decision-making process and that facilities should be constructed using the best available technology and rigorously regulated by government.

Opinions differed on who should construct hazardous waste management facilities and how they should be financed. The Canadian Manufacturers Association recommended, for example, that the facilities should be operated by the private sector under government regulation. They suggested that some subsidization of disposal may be required from government. Environmental and citizen groups tended to support government owned and operated facilities funded on a user-pay basis. Still others, such as the Dartmouth Chamber of Commerce, suggested the establishment of a hazardous waste management corporation that would be wholly or partially owned by the Province. The Corporation would either build and operate facilities or supervise contractor owned and operated facilities.

Those groups which support private sector initiatives believed that industry can operate facilities more efficiently than government. On the other hand, it was felt by others that because of the question of liability and the need to ensure safe operation, government should own and operate any facilities.

Regardless of ownership, most presenters felt that the financing of facilities should be based on the user-pay principle although it is recognized that some subsidization, especially at the outset and for small generators, may be required.

4.4.3 Emergency Response Capability

The Task Force heard from federal, provincial and local response agencies regarding environmental emergencies such as fires and accidental spills involving dangerous goods and hazardous wastes. In this area, the concerns of these groups can be summarized as follows:

- The need to clarify the authority and responsibility of each level in the emergency response network.
- The need for training and equipment, and
- The need for accurate and timely information.

In Nova Scotia, a twenty-four hour telephone emergency response reporting system is operated by Federal and Provincial Governments. By agreement between the two governments, a facility has been established at the Coast Guard Traffic Centre in Dartmouth, Nova Scotia for reporting environmental emergencies and accidental spills. Information reported through this system is relayed to Provincial and Federal Environment officials by the Coast Guard Centre. In turn, these Federal and Provincial Environment officials contact appropriate agencies within their jurisdictions. The agreement between the two governments specifies the lead agency for a variety of emergency situations.

Either through the Federal-Provincial emergency response reporting system, or as a result of direct contact, local fire officials are often notified of emergencies involving dangerous goods or hazardous wastes. The legislated responsibility of the fire service is to repond to fires. Because of their proximity to the scene of most emergency situations, and their access to equipment and people, local fire services have assumed additional responsibilities, including response to environmental emergencies.

In Sydney, the Task Force was told by the Fire Chief for the City:

> Incidents involving these products (dangerous goods and hazardous wastes) seem to be occurring more frequently, during the past few years... The majority of these incidents cause very serious situations and result in disrupting the lives of hundreds of people. Fire departments are involved in almost all of these incidents, certainly not because we are chemical experts, but because of the type of service we provide.

In Kentville, the Town of Windsor posed the following questions and concerns to the Task Force:

> Is the Fire Service expected to protect their personnel, fight fires, run emergency services all at their expense?... Fireman and police are the first on the scene. How is our problem going to be solved? Will the Province take the situation in hand, set down rules and regulations for storage and handling, identification of the storage area and a placard outside showing the contents?... Will the Province set up rules and regulations to absolve Fire Departments from any lawsuits or liabilities that may result from their action?

The issue of responsibility and liability was also raised by the Deputy Chief of the Yarmouth Fire Department who told the Task Force:

> One of the greatest problems faced by all Fire Departments is that we, as we understand the law, cannot legally respond to anything but a fire. Our Department has been one of the leaders in pressing for a change in this law, to no avail... For the most part, we will respond where our equipment, manpower and our expertise is required within our community, but we know we are setting up the possibility of Court Action against our Fire Department, our Town, and worst of all, possibly ourselves as individuals... If there is no fire, are the RCMP or local police in charge, where do the Federal and Provincial Environment people fit in, where do the Town or Municipal officials come into the picture? Where do the owners or managers of building, land or vehicles in or on which these materials are located? And what about the E.M.O.? Who has the right to order people out of their homes or out of buildings, who has the right to block off roads? And on a Saturday night on a holiday weekend, how does the Mayor or Warden declare an emergency, since this must be done by Order in Council.

The need for trained emergency response personnel, with the proper equipment was emphasized by all local fire agencies that met with the Task Force. In each instance, however, the cost of equipment and training and the difficulties associated with training the number

of personnel in the Province was raised. These issues were of particular concern to the volunteer fire services who are responsible for raising much of their own funds and who donate their time for the protection of their communities.

A variety of training courses are available to the local fire services for emergency situations involving hazardous materials. The local fire service, however, may be required to pay the cost of travel, accommodation and any loss of salary. The Province and the Federal Government have initiated training courses for local officials involved in emergency response and these may be useful in reaching larger numbers of people and in minimizing the costs associated with training. Notwithstanding these efforts, the Yarmouth Fire Department summarized the current training situation as follows:

> It is useless for anyone to suggest that present courses available are filling the bill. They are not. In Yarmouth County, there are roughly 300 to 400 Firefighters and their roles are constantly changing as members join, quit, retire or whatever. If training is to be effective, it must be done county by county. Even if we had ten on staff, paid or volunteer, who were fully trained, they could all be unavailable when required.

Responding to emergencies involving dangerous goods and hazardous wastes can be expensive, especially for those communities which are dependent on volunteer services. In Sydney, Chief Donald Johnston told the Task Force that:

> We would also urge you to recommend that chemical suits be provided for Fire Departments, in key areas, where incidents involving dangerous goods and hazardous wastes are likely to occur. These suits are very expensive, costing anywhere from two hundred dollars ($200) for a disposable suit, to thirty-five hundred dollars ($3500) for a suit that is effective against chemicals. At least two or more suits are required as it is necessary for a person with a suit on to clean another person off, after he has been exposed to any chemical. Most small Fire Departments, especially volunteer fire departments, just can't afford to purchase these suits and are endangering their lives every time they are exposed to these chemicals.
>
> A number of fire departments, in larger cities, have established chemical Response Units. The men assigned to these units are specially trained in chemical spills and fires. They are equipped with a vehicle that contains all the equipment needed for this type of incident, such as, jaws of life, air bags, jacks, chemical suits, breathing apparatus, air compressor to fill air bottles, materials to temporarily patch a leaking tank, emergency lights, radios, emergency telephone hook-up, generator to supply electricity for lights and tools, etc.
>
> To purchase a vehicle and equipment, and train men for a Response Unit, is a very costly item and I don't know any department, in the area, that can afford an expenditure such as this. We feel that some consideration should be given to assist several fire departments, in Cape Breton, in setting up this type of unit.

The Task Force was told that all emergency response personnel involved with dangerous goods must have access to information regarding the nature of the dangerous goods or hazardous wastes involved and the best means of handling the emergency. Through the Canadian Transport Emergency Centre (CANUTEC) emergency response personnel can receive assistance in identifying dangerous goods and hazardous wastes and the appropriate action to protect life, property and the environment. CANUTEC is a twenty-four hour emergency system that can be directly linked by telephone from the Centre Headquarters in Ottawa to the scene of an emergency.

To be effective, however, emergency response personnel must be familiar with the dangerous goods or hazardous wastes which are involved in the accident or spill prior to taking action. The need for this was highlighted by the Sydney Fire Department:

> Although we don't usually know what we are dealing with until we arrive at the scene, we are supposed to have instant solutions to every problem.
>
> The same problems arise when we respond to a warehouse fire where these chemicals are stored, especially through the night, when there is no one around to inform us that chemicals are stored in the building. In most cases, we must force an entry into the building without knowing what is stored in it, and by the time we find out, we have already been exposed to the chemicals. With some chemicals, even though we are wearing breathing apparatus, the chemicals can be absorbed through

> the skin and into the bloodstream, causing damage. This has happened in the Saint John City Jail fire where a number of firefighters had to be hospitalized.

Because of similar situations throughout the Province, the Task Force was told that there must be a requirement for inventories of dangerous goods and hazardous wastes to be prepared and submitted to emergency response personnel. As well, local officials should have familiarity with the dangerous goods and hazardous wastes that are routinely transported to their jurisdictions so that they can develop appropriate plans and procedures for responses.

There is currently no requirement in Nova Scotia for those responsible for a spill of a hazardous waste to report the event. The lack of notification, or delayed notification to appropriate individuals can result in increased damage and risk to people, property or the environment. Environment Canada told the Task Force that the mandatory reporting of spills should be a legislated requirement in Nova Scotia.

The Task Force was told that following an emergency event, an evaluation should be undertaken to determine the circumstances that gave rise to the emergency. The Town of Kentville in their submission suggested that a complete record of events be maintained on file. The Acadia Institute at Acadia University in Wolfville told the Task Force that in emergencies such as the fire at the Maple Leaf Farms Limited warehouse in Canning, a comprehensive review of the events should be undertaken. According to the Institute, a comprehensive review would enable provincial agencies to be prepared for future incidents and could lead to the preparation of guidelines for future events.

4.4.4 Regulations and Procedures For Implementing a Comprehensive Strategy

Nova Scotians told the Task Force that in establishing a comprehensive strategy for managing dangerous goods and hazardous wastes, regulations and procedures must be adopted to control their use, storage, transportation and disposal. Generally, regulations are viewed as preferable to guidelines as there is a concern that guidelines provide too great an opportunity for negotiation and compromise. The Annapolis Valley Affiliated Board of Trade (AVABT) told the Task Force that:

> Some members of the AVABT have expressed the hope that the approach the Government takes is more in the form of guidelines than regulations to let the community demonstrate its willingness to treat the whole issue of hazardous wastes management with the proper care it deserves.

In contrast to this position, the Halifax Board of Trade argued that regulations should be adopted rather than guidelines. However, they indicated, as did most other presenters, that they have:

> . . . grave concern over the potentially exorbitant costs of over regulation and enforcement, and recommends that public education and self-enforcement, jointly sponsored by industry and government, be the cornerstone of any control program.

There was general agreement on the need for public participation in the formulation of regulations.

4.4.5 Inventories of Dangerous Goods and Hazardous Wastes

The Task Force heard from many groups, especially those responsible for emergency response, that there should be a mandatory requirement for those persons handling dangerous goods and hazardous wastes to file inventories with local fire officials, municipal governments and the Nova Scotia Department of the Environment. Fire officials also indicated a need for material safety data sheets to be made available to them along with inventory information. Several municipal governments, including the Town of Truro and the Municipality of the County of Yarmouth, indicated that they did not have accurate information on who is using or generating dangerous goods and hazardous wastes. It is therefore difficult, if not impossible, to prepare land use plans or emergency response plans that are reflective of the current situation within their municipalities.

Some fire departments have taken the initiative in surveying parts of their communities to determine the situation with respect to dangerous goods and hazardous wastes. In some instances, individuals or companies have notified local fire officials of the dangerous goods or hazardous wastes that are used or stored on their property and how they should be handled in emergency situations.

For the most part, however, municipalities and local fire officials have neither the expertise or the resources to prepare accurate inventories. The Yarmouth Fire Department, for example, stated:

> In our opinion, few if any Volunteer or combined Volunteer-Paid Departments have the time and staff to properly look into the entire matter of gathering information and keeping it up to date on sites where both hazardous material and hazardous waste material are or could be located. Thus we believe that all, or most Fire Departments will require assistance in this matter from Provincial or Federal people working in cooperation with industry as well as the transportation business world within their communities and the areas that they serve either under contract or in Mutual Aid operations.

Most schools, hospitals and universities indicated that local fire officials are probably unaware of the dangerous goods and hazardous wastes used and stored in their institutions. For instance, the Queen's District School Board indicated to the Task Force that they have prepared a list of dangerous chemicals used in their schools but they were uncertain whether this information had been given to the local fire department.

4.4.6 Storage Requirements

It is the overall opinion of individuals and groups who made presentations to the Task Force that the long-term storage of hazardous wastes should not be viewed as an acceptable option. Dr. C. Chomski of Pratt and Whitney Limited indicated that companies should be permitted to store hazardous wastes for *only* one year. Both Sanexen and Tricil indicated that proper management facilities such as transfer stations and treatment plants can not compete with the indefinite storage of hazardous wastes at the generator sites.

According to those who made presentations, regulations for the proper storage of dangerous goods and hazardous wastes are required, even if the regulations place a time limit on the period in which hazardous wastes may be stored. The regulations should address the types of facilities that can be used for storage and the containers in which wastes can be stored.

In their presentation, the Nova Scotia Department of Health made a number of specific recommendations for the storage of both dangerous goods and hazardous wastes:

> A list of bulk materials stores should be available at the site with copies given to the local Fire Chief and Health Unit Director. All structures should be designed to meet the Fire Marshall's requirements, the local building codes and follow good engineering practices. When an existing building use is changed to a storage facility or to hold a different type of hazardous material, the building should be deemed suitable by a qualified professional engineer. Employees must be trained in the proper handling of hazardous products and the need to keep incompatible products separate. Buildings and sites should be placarded using a system similar to that used in the Transportation of Dangerous Goods Act. The site drainage system should contain all spills on-site. Structures storing some hazardous materials such as PCB's should either have no floor drains or have the floor drain connected to a holding tank. Storage sites for hazardous wastes and certain dangerous goods must not be located on either the watershed or recharge zone for municipal water supplies and adequate protection should be provided for private water supplies. There should be a program to take over the operation of a storage facility when the owner either fails to operate it properly or can no longer operate it. Storage of hazardous wastes should be viewed as a short-term step leading towards recycling, reuse or disposal.

4.4.7 Licencing of Waste Handlers

The Task Force was told that regulations should provide for the licencing of all persons involved in the transportation, storage and disposal of hazardous wastes. The Canadian Manufacturers Association told the Task Force that:

> Waste handlers should be licenced to deal with certain waste after demonstrating that their facility is capable of dealing with the product safely and they are competent to manage it. There should

be a minimum of inspection and a procedure whereby under certain circumstances their licence can be removed provided there are appeal safeguards.

Many other groups and individuals also indicated the need to license those transporting hazardous wastes. Many felt that a licencing system would complement manifest procedures and the Nova Scotia Dangerous Goods Transportation Act.

4.4.8 Liability Insurance

The Task Force was told that those responsible for handling dangerous goods and hazardous wastes should be required to demonstrate that they have the financial means to clean-up any spills or accidents that occur as a result of their activities. The Municipality of the County of Queens told the Task Force that the Province should:

> provide legislation that would require all users of hazardous waste materials to show evidence of sufficient insurance to cover costs of cleaning up and disposing of wastes resulting from accidents, spills, etc.

Representatives of several companies and organizations, however, described their difficulties in obtaining environmental liability insurance. The Canadian Manufacturers Association told the Task Force that it is virtually impossible to get adequate insurance coverage for environmental accidents. The Retail Gasoline Dealers Association of Nova Scotia said that their members can not get liability insurance at any price for environmental damages. The Crop Protection Institute of Canada indicated that they are examining options to existing insurance programs including self-insurance and bonding mechanisms.

4.4.9 Reporting of Spills

There is currently no requirement in Nova Scotia for the mandatory reporting of a dangerous goods or hazardous wastes spill or emergency. Several municipalities and Environment Canada, recommended that a regulation should be adopted to ensure that spills are reported.

4.4.10 Waste Oil

The Task Force heard from several companies engaged in the business of collecting and selling waste oil. If improperly burned, or if contaminated, waste oil can pose a serious environmental problem. Mr. James Bagnell, Inland Oil of Truro, told the Task Force that the orderly development of the waste oil recycling and use industry in Nova Scotia will require government regulation. Some of the reasons he suggested for increased regulation, and the issues regulations should address, include:

- The potential for waste oil contamination from PCB's together with all other hazardous chemicals which are in used oil.
- The likelihood of used oil seeping into water systems and into ecosystems.
- The possibilities of low flash material being present in this product, such as gasoline, being sprayed with used oil.
- Oil is a non-renewable resource which should increase the necessity for re-refining.
- The potential for water contamination caused by road oiling.

The Retail Gasoline Dealers Association of Nova Scotia told the Task Force that waste oil haulers should be licenced. They also recommended that it should not be permissable to dispose of waste oil except to licenced haulers.

4.4.11 Abandoned Waste Sites

Several groups expressed their concern to the Task Force that a comprehensive strategy address both past and future waste management practices. In several instances, references were made to the joint Federal-Provincial *Abandoned Land Waste Disposal Sites Study* which was begun in 1983. The purpose of this *Study* was to identify abandoned sites that had been used for waste disposal. The sites were to be priorized according to the

type and quantity of wastes that had been placed in them, existing environmental conditions and other criteria. The work was to be undertaken in three phases. Although some preliminary results have been released, the Phase I report has not. Federal funding for Phases II and III has been eliminated.

In Amherst, the Task Force was told by the Municipality of the County of Cumberland that:

> We have been briefed on the results of the study on abandoned waste disposal sites in Nova Scotia, which was done in 1985 as a joint Federal/Provincial study. We are concerned about the fact that there are a number of high priority disposal sites in the Amherst area, two of them being former municipal dump sites operated by the Town of Amherst. We are aware that there is a monitoring system installed at the old Amherst dump on the MacDonald Road. We would very much like to see sufficient resources committed to on-going monitoring and remedial action where it is warranted, for all of the high priority sites.

Similarly, in Halifax the Ecology Action Centre told the Task Force:

> We haven't really begun looking into the problem. We wonder what kind of problems will be identified when investigators start looking back into Nova Scotia's industrial history. For example, what happened to mercury wastes associated with the felt hat manufacturing facility in Truro? We are already aware that wastes from gold mining operations of the late 1800's and early 1900's in the Waverley area have contributed to arsenic and mercury contamination of waters and sediments respectively.
>
> We recommend that a more comprehensive assessment should be made of the hazardous waste legacy of Nova Scotia industries long since disappeared. Excavations, well drilling or digging could result in serious problems.

The necessity for a more comprehensive evaluation of past waste disposal practices was also stressed by the Community Planning Association of Canada (Nova Scotia Division).

The Cape Breton Development Corporation was concerned that there was insufficient public understanding of the purpose of the *Abandoned Land Waste Disposal Site Study* and the preliminary results which were released:

> In this day of nuclear, toxic chemical and carcinogenic materials, when the printed and broadcast news is full of stories of PCB's and PAH's, the public tends to identify readily in their minds with these materials and to automatically associate them with "hazardous waste". When the Minister's list was published, we were deluged with calls from distraught and overwrought citizens who lived in the vicinity of some of the named sites, demanding to know why we hadn't informed them that there were PCB's in the waste dumps! Nothing could have been further from the truth, and yet the image was so firmly fixed in the public mind that there was almost nothing we could do to convince them otherwise. As far as they were concerned, the Department of the Environment had tested the dumps, and we were lying or covering up.

The Cape Breton Development Corporation told the Task Force that they should not be responsible for the clean-up cost of abandoned sites which may require rehabilitation. They stated:

> It would be unfair and even unreasonable to suggest that clean-up costs be borne by "owner" companies, especially when ownership is "historical" in nature, as it is in our case, and when the deposits were made long before regulations were in place to prohibit such deposition. In those cases, clean-up costs should be borne by the Government, but funds might be raised by the imposition of a special industrial tax to create a "Super Fund" such as the one recently legislated in the U.S.. Funds for the clean-up of mine waste sites might come from mining royalties and taxes.

The Ecology Action Centre is of the opinion that the funding for any further investigations into abandoned waste sites should come from the large users, transporters and manufacturers of chemicals in this Province.

4.4.12 Institutional Wastes

Dangerous goods and hazardous wastes are used and generated in a variety of situations. The Task Force heard not only from industrial and commercial users, but also from many schools, universities and hospitals that are concerned with current storage and disposal practices.

As already mentioned, some school boards see the need for preparing inventories of dangerous goods that are stored on their premises. While this is an important first step, school teachers who met with the Task Force, such as those from the Dartmouth City Schools and elsewhere, saw the need for other measures. Teachers in Dartmouth told the Task Force that there is a need for acceptable disposal opportunities for school laboratory hazardous wastes, improved school design with respect to storage facilities, and improved curriculum and teacher training in the area of dangerous goods and hazardous wastes management.

Similar needs exist in the universities. In at least one instance, however, the Task Force heard of a positive program being undertaken in the Chemistry Department of St. Francis Xavier University for separating, classifying and packaging their hazardous wastes for disposal.

In several locations throughout the Province, the Task Force heard from hospital officials that they are concerned with their current hazardous wastes disposal practices as they may affect workers, the public, and the environment. Of particular concern to hospital officials was the lack of guidance with respect to proper waste management practices and the lack of incineration facilities for wastes that should be burned.

4.4.13 Household Hazardous Wastes

The disposal of household hazardous wastes in municipal facilities is a concern to some Nova Scotians. Those who live in proximity to municipal landfills, or are interested in the operation of municipal landfills, raised this issue with the Task Force on several occasions. The lack of suitable alternatives for disposing of household wastes was identified as an important impediment to their safe management.

The Ecology Action Centre told the Task Force that Government must ensure that homeowners are educated about their responsibilities for proper waste management and provided with alternatives.

The Margaree River and Community Protection Committee told the Task Force:

> In the long term, individuals and companies should be guided as to whether a product is suitable for landfill disposal or is a hazardous waste by labels printed on the products by the manufacturer.
>
> Nova Scotians need easy access to a hazardous waste pick-up service which would be provided regularly at predetermined depots for any and all wastes not deemed suitable for landfill.

Municipal governments told the Task Force of the potential difficulties associated with collecting and disposing of household hazardous wastes. David Muise, speaking for the Joint Expenditure Board of Industrial Cape Breton, questioned whether homeowners could be persuaded to separate garbage in their residences. Others indicated that the cost of this service might discourage some municipalities from instituting collection and disposal programs.

4.4.14 Reducing and Recovering Dangerous Goods and Hazardous Wastes

Many Nova Scotians believe that the only effective way to manage hazardous wastes is to eliminate or reduce the volume of dangerous goods used. They are of the opinion that society is overly dependent on dangerous goods and this dependence must be broken either by reducing and eliminating dangerous goods or through recovering and recycling our hazardous wastes.

The Ecology Action Centre told the Task Force that the Department of the Environment should promote low waste technologies. The Community Planning Association of Nova Scotia proposed small business incentives to help stimulate the recovery and recycling of hazardous wastes. Others proposed that levies or taxes be placed on all chemicals entering the province either to discourage their use, promote alternatives or to encourage recovery.

The Task Force heard from many industrial users of dangerous goods that the economic value of dangerous goods and the cost of safe disposal methods are two important reasons that industries are already seeking means to reduce their use of dangerous goods and to recover more and more quantities of waste by-product.

GUIDING PRINCIPLES, CONCLUSIONS AND RECOMMENDATIONS

5.1 GUIDING PRINCIPLES

During its public meetings, the Task Force heard from many individuals who made comments and recommendations for improving the management of dangerous goods and hazardous wastes. What emerged from these discussions was a series of principles that Nova Scotians believe should be applied in guiding the development of Provincial plans and policies for the management of these substances.

These guiding principles are:

Through a comprehensive strategy, the Province must assume a leadership role in providing for the safe management of dangerous goods and hazardous wastes.

The public must be provided with extensive opportunities to participate in the formulation of any plans, policies and programs implemented by the strategy.

The efforts of government, industry, institutions and individuals must be directed toward reducing and re-using dangerous goods and thereby minimize the potential for emergencies and the volume of hazardous wastes generated.

As a general principle, Nova Scotians must be responsible for managing the hazardous wastes generated in their province.

Hazardous wastes should not be generated in Nova Scotia unless there are approved disposal methods for these wastes.

These principles have been used by the Task Force in formulating its recommendations.

5.2 CONCLUSIONS AND RECOMMENDATIONS

5.2.1. Defining Dangerous Goods and Hazardous Wastes

The Dangerous Goods and Hazardous Wastes Management Act which was proclaimed in 1986 defines dangerous goods and hazardous wastes as substances designated in the regulations or confirming with criteria set out in the regulations. Pending the report of the Task Force, the Government has not adopted regulations that designate substances or establish criteria.

The Task Force has concluded that dangerous goods and hazardous wastes should be defined by applying the following procedures and schedule for implementation:

- Specific wastes that have been identified as posing management problems for the Province can be designated as hazardous wastes immediately.
- Criteria, for categorizing dangerous goods and hazardous wastes that conform to criteria in other Canadian jurisdictions, can be adopted by the Province as regulations under the Dangerous Goods and Hazardous Waste Management Act.
- Persons handling dangerous goods or hazardous wastes which conform to the criteria adopted by the Province under the Dangerous Goods and Hazardous Waste Management Act will require a period of time to comply with any regulations which are proclaimed for managing these substances.

Discussions

While most presenters did not address directly the problem of defining dangerous goods or hazardous wastes, they did recognize the need for a definition that would form the basis for regulating dangerous goods and hazardous wastes. Discussions at Task Force

meetings tended to centre on wastes which have received a high public profile or posed a particular management problem for specific companies or institutions. In their presentations, individuals were concerned with the management of PCB's, contaminated waste oil, tetrachloroethylene, and asbestos.

Over the last several years, each of these wastes have been the subject of considerable public concern, and in response the Province has adopted guidelines to control their use and disposal. The vast majority of persons who met with the Task Force believe that regulations are preferable to guidelines since the latter can be ignored or provide excessive opportunity for compromise. Therefore, guidelines may be unfairly or ineffectively applied. The Task Force agrees with this conclusion. The Task Force has also concluded that those dangerous goods and hazardous wastes which can be identified immediately as constituting a management problem should be designated as dangerous goods and hazardous wastes and subject to regulation under the Dangerous Goods and Hazardous Waste Management Act.

There is general agreement in industry and government that dangerous goods or hazardous wastes have one or more of the following characteristics: flammability, corrosivity, reactivity or toxicity. In some jurisdictions, specific criteria which define each of these characteristics have been developed. These criteria, in addition to prescribed substances, determine how these jurisdictions define dangerous goods and hazardous wastes. This approach has been adopted in Manitoba, Alberta, Ontario and Quebec.

The Task Force believes that a management approach based on a list of prescribed substances and criteria is essential for ensuring the proper management of dangerous goods or hazardous wastes. A list, without criteria, would be administratively cumbersome. On the other hand, criteria alone would not provide a sufficient degree of flexibility or predictability.

The Department has currently developed and implemented guidelines for PCB's, contaminated waste oil, tetrachloroethylene and asbestos. Responsible generators are complying with these guidelines. Since there is an administrative structure for these guidelines, and generators are aware of them, the Task Force has concluded that these guidelines should be adopted as regulations under the Dangerous Goods and Hazardous Wastes Management Act.

Major industrial hazardous waste generators would have a familiarity with the criteria listings developed in other provinces for managing dangerous goods and hazardous wastes. Small generators, and generators who do not have ready access to technical expertise, do not. The Task Force has concluded, therefore, that while a criteria listing should be adopted similar to that in other jurisdictions, a period of time to allow for implementation of a criteria list should also be provided. It is the Task Force's opinion that one year is sufficient for this notification period.

The Task Force was told that the definition adopted in Nova Scotia should be compatible with those in other jurisdictions. This would minimize confusion for the public and industry and avoid "pollution havens" from occurring. The Task Force agrees. However, the adoption of criteria for defining dangerous goods or hazardous waste should not preclude the Department from adding to the list of designated substances when evidence exists that specific dangerous goods or hazardous wastes must be regulated to ensure their proper management.

In summary, based on its analysis of submissions and information on dangerous goods and hazardous wastes definitions in other jurisdictions, the Task Force recommends:

Recommendation 1:
Designated Dangerous Goods and Hazardous Wastes
The Minister of the Environment should immediately designate PCB's, contaminated waste oil, and tetrachloroethylene as dangerous goods and hazardous wastes under the Dangerous Goods and Hazardous Wastes Management Act.

Recommendation 2:
Hazardous Wastes Criteria
The Minister of the Environment should adopt criteria similar to those in other Canadian jurisdictions under the Dangerous Goods and Hazardous Wastes Management Act to define dangerous goods and hazardous waste.

To promote uniformity, the criteria should closely reflect those used by Nova Scotia to designate dangerous goods under the Dangerous Goods Transportation Act.

Recommendation 3:
Public Notification
The Minister should allow one year for persons to comply with those provisions of the Dangerous Goods and Hazardous Wastes Management Act following the adoption of regulations which apply to dangerous goods and hazardous wastes that meet the criteria as set out in Recommendation 2.

5.2.2.
Hazardous Waste Management Facilities

Most hazardous wastes which are currently generated in Nova Scotia can be safely managed within the Province. This is possible through either the continued use of approved practices or, in other cases, modifications to existing facilities. For some hazardous wastes, however, there is no approved, viable disposal option in Nova Scotia. Given this, and the opinions expressed to the Task Force in its public sessions, it is concluded that:

Transfer Facilities

- There is a requirement to provide for the secure, temporary storage of hazardous wastes in Nova Scotia prior to their shipment to approved disposal facilities.
- A detailed step-by-step Action Plan is required to site, construct and operate transfer facilities in Nova Scotia.
- Transfer facilities should be constructed using the best available technology and rigorously regulated by Government.
- A provincial inventory of hazardous wastes and appropriate siting studies by qualified and experienced individuals are required before transfer facilities can be located.
- Full and open public consultation will be necessary to site transfer facilities successfully.

Permanent Treatment Facilities

- Based on existing inventory data, facilities for the fully integrated treatment of the hazardous wastes generated in this Province, cannot be justified on an economic basis. Various factors, such as public demand, increased volumes, or border closings, could alter this situation.
- Some aspects of an integrated treatment system may be economically feasible and have been proposed for Nova Scotia.
- Any permanent sites for the fully integrated or partial treatment of hazardous wastes must be subjected to a detailed environmental assessment, and rigorously regulated by Government. Extensive public consultation must be undertaken.

Mobile Treatment Facilities

- Mobile treatment facilities are feasible for some wastes and have been used in Nova Scotia.
- Mobile treatment systems operating in Nova Scotia must be required to obtain regulatory approval. Public notification must be undertaken.

Discussion
Nova Scotians who appeared before the Task Force believe as a general principle that we should be responsible for managing our own wastes. While there may be a necessity to cooperate with other provinces to use facilities in their jurisdiction; and, while this will likely remain true for some considerable time in the future, Nova Scotians support self-management as a guiding principle. Consequently, the Task Force has concluded that

as the generators of hazardous wastes, Nova Scotians have both a responsibility and an interest in striving towards this principle.

Many people who made representations to the Task Force were concerned that a hazardous waste could be generated for which there is no acceptable treatment and disposal method. In fact few, if any, hazardous wastes would fit into this category. Even PCB's, which have received considerable public attention, can be disposed of with high temperature incineration. However, because of public opposition, facilities that could safely destroy them are not being approved for this purpose in Canada. The importation and manufacture of PCB's in Canada has been prohibited by Federal regulation, and as equipment containing PCB's is taken out of service, it is being stored.

Some individuals in Nova Scotia are storing hazardous wastes, not because there are no acceptable and approved treatment opportunities, but because the cost of storage is less than that of treatment. While many of these wastes may be stored in an acceptable manner, it is the opinion of the Task Force that storage of hazardous waste is not an acceptable, long-term solution to this problem. Therefore, the Task Force has concluded that the generation of a waste must not be permitted unless there is an approved treatment and disposal method that will be used.

The Task Force recognizes that PCB's already stored in the Province constitute a special case and has concluded that the continued storage of PCB's must be permitted, but under stringent regulation. If and when treatment facilities are approved, the stored PCB's should be transported there for destruction.

The Task Force has concluded that there is a requirement for hazardous waste transfer facilities in Nova Scotia. The primary function of transfer facilities would be to collect, temporarily store, and ship accumulated hazardous wastes from generators to approved treatment facilities. For economic reasons, some neutralization and blending of compatible wastes would be required. There should be no disposal at a transfer facility and only wastes which will be disposed of at an approved facility should be accepted. Therefore, there should be no permanent storage at a transfer facility.

The Task Force realizes that some waste generators in Nova Scotia are currently treating their wastes in an acceptable and approved manner either at their site or by shipping wastes to facilities in other jurisdictions. The Task Force would not expect these generators to use the proposed transfer facilities unless it proves to be a more efficient and economic option for them.

At the same time, the Task Force has concluded that there is insufficient public understanding or acceptance of hazardous waste management facilities to site a transfer station. It is the opinion of the Task Force that public understanding is critical for the successful siting of these facilities.

Notwithstanding the recommendation of the Porter Dillon *Special Waste Management Study for the Metropolitan Authority of Halifax-Dartmouth and the County of Halifax* to site a transfer facility in Dartmouth based on the volumes of wastes generated in that city, the Task Force has concluded that until further studies are completed, it is not possible to site a transfer facility in Dartmouth, or in any other location.

Inventory and siting studies must be conducted by qualified and experienced individuals, prior to selecting any location, or locations, that would adequately serve the Province.

The public must be informed and consulted throughout the site selection process, which would include the preparation of inventories, the development of site selection criteria and the detailed environmental assessment of preferred sites.

The Task Force was encouraged with the recognition by municipal officials of the need for transfer facilities. The Task Force believes that implementation of its recommendations will add to increased awareness and lead to the establishment of transfer facilities in acceptable and secure locations.

The Task Force concluded that there is an urgent need to develop a detailed step-by-step Action Plan for the development of facilities. The Plan must provide the time and opportunity for inventory studies, the development of site selection criteria, environmental assessments, and public education and consultation prior to the construction and operation of transfer facilities that can furnish efficient service and are publicly acceptable. The Task Force believes that the Plan could be implemented within a five year time-frame. While there may be some concern that five years is too lengthy a period, the Task Force believes that without proper study and consultation, it will not be possible to site any facilities. The task of managing hazardous wastes would therefore become even more complex.

In concluding that Nova Scotians are responsible for managing their own wastes, the Task Force realizes that fully integrated treatment facilities may be required at some point in the future. Inventory information on the volumes and types of waste generated in Nova Scotia currently indicate however that fully integrated treatment facilities, using a combination of incineration, neutralization and chemical landfilling, are not economical. This conclusion is supported in submissions made to the Task Force by national companies engaged in hazardous waste disposal.

The conclusion of the Task Force that fully integrated treatment facilities are not presently economical in Nova Scotia, and may not be for some time in the future, should not be interpreted as implying that these facilities can not be safely operated. Secure, fully integrated facilities are operated successfully in other jurisdictions and provide for the protection of public health and the environment.

Various factors may dictate that fully integrated treatment facilities be developed in Nova Scotia at some point in the future. Public demand, an increase in the volumes of hazardous wastes generated, or border closings that make it impossible to ship wastes to other jurisdictions, will create the need to examine fully integrated treatment facilities for Nova Scotia. If this were to occur, extensive scientific studies and public consultation would be mandatory.

Several companies have indicated an interest in the development of partial treatment systems that would be capable of treating some hazardous wastes in Nova Scotia. Obviously, the economics of this would be dependent on the volume of hazardous wastes generated. The environmental suitability of these systems should be closely examined by the Minister of the Environment. Any proposal to site these facilities would require extensive environmental assessment and public consultation.

Mobile systems for treating and disposing of some hazardous wastes have been developed and are achieving acceptable results. For a Province such as Nova Scotia, which produces relatively small volumes of wastes in many locations, mobile treatment may provide an efficient and acceptable option.

The operation of a mobile treatment system is not dependent on the approval of a permanent location; however, it is important to ensure that the technology meets approved standards. The Task Force has concluded, therefore, that there is a potential for mobile treatment systems in Nova Scotia. If proven technically feasible, operators of these facilities must be required to obtain regulatory approval. The public must be notified when a treatment system is to be operated in the Province and be notified of its operating location and regulatory framework. Public notification will, in the opinion of the Task Force, avoid adverse public backlash and at the same time promote the understanding that there are safe and efficient means for managing hazardous wastes.

Based on the opinions and recommendations of Nova Scotians, the Task Force recommends the following with respect to hazardous wastes management facilities:

Recommendation 4:
Transfer Facility (Facilities) for Nova Scotia
The Minister of the Environment should undertake a five-year Action Plan to develop a hazardous wastes transfer facility (facilities) for Nova Scotia.

Recommendation 5:
Inventory
The Minister of the Environment should prepare an inventory of hazardous wastes generated in all regions of the Province. The inventory should include information on point of generation, volumes, types, current disposal methods and other pertinent items. Inventory data on generation rates in Halifax-Dartmouth should be revised to include those generators not included in the Porter Dillon Study. The Inventory should be performed by independent, qualified and experienced individuals.

To ensure the on-going monitoring of generation rates and the adequacy of facilities, the inventory must be periodically updated.

Recommendation 6:
Site Selection
The Minister of the Environment should initiate site identification studies for the development of transfer facilities. In selecting potential sites, the number of transfer facilities required to service the Province adequately should be assessed. Only those sites that afford maximum protection of public health and the environment should be considered. These studies must be conducted by independent, qualified and experienced individuals.

Recommendation 7:
Public Consultation
The Minister of the Environment must ensure that the public is informed of the process for identifying potential hazardous waste transfer facility sites. The public must be consulted prior to, and throughout, any detailed environmental assessment of these sites. The public consultation process must be conducted by independent, qualified and experienced individuals.

Recommendation 8:
Development of Transfer Facilities
The Minister must establish specifications for the construction and operation of any transfer facility.

The Minister should issue a call for proposals to qualified specialists that may have an interest in constructing and operating transfer facilities that satisfy the Minister's specifications.

The Minister must proceed to construct any facility under Provincial ownership in the event that qualified specialists are unable, or unwilling, to satisfy the specifications.

Recommendation 9:
Finances
The user pay principle should be applied as an objective for financing any transfer facility regardless of whether the facility is developed by the private or the public sectors.

Recommenation 10:
Existing Transfer Facilities
The Minister of the Environment should not preclude persons currently involved in the waste transfer business from either submitting proposals or operating competitive services. However, after the construction of any transfer facility resulting from implementation of these recommendations, any existing transfer facility, or proposed transfer facility, should be required to proceed through an environmental assessment and public consultation process as proposed in these Recommendations.

Recommendation 11:
Treatment Systems
The Minister of the Environment should continue to monitor opportunities to develop partial treatment systems in Nova Scotia.

Any proposal to develop partial or fully integrated treatment systems must be extensively studied and rigorously regulated. Extensive public consultation is mandatory.

Recommenation 12:
Mobile Treatment Facilities
The use of mobile treatment systems should be continued where feasible and after obtaining appropriate regulatory approvals. Public notification of the use of mobile systems must be undertaken.

5.2.3.
Emergency Response

The Task Force received submissions from organizations and individuals who perform an emergency response role including: fire service personnel, municipal governments, provincial and federal emergency response officials, and representatives of industries which have developed an in-house capability. The Task Force also met with individuals who are not directly involved in emergency response but have an interest in this subject. Based on submissions and discussion, the Task Force has concluded the following with respect to emergency response planning and implementation for events involving hazardous wastes and dangerous goods.

- The role and liability of fire departments in responding to spills of dangerous goods and hazardous wastes is not sufficiently specified.
- Local fire departments do not have adequate access to equipment and training for hazardous wastes and dangerous goods emergencies.
- A provincial response team would assist properly trained and equipped local fire departments.
- Emergency response personnel would benefit if persons using or generating dangerous goods and hazardous wastes were required to file an inventory, and material safety data sheets, with municipal officials and local fire departments.
- Emergency response would be improved if inventories of hazardous wastes and dangerous goods were required to be kept on site.
- Emergency response would be improved if persons using buildings to store dangerous goods and hazardous wastes were required to post a placard similar to the Dangerous Goods Transportation Act system.
- The mandatory reporting of spills of dangerous goods and hazardous waste would improve emergency response.
- A policy to provide public information on spills of dangerous goods and hazardous wastes would relieve public fears and improve public understanding.
- In situations where an emergency has occurred, an evaluation of the reponse by the lead agency, that was made publicly available, would assist in responses to future incidents and relieve public concerns.

Discussion
Nova Scotians are highly dependent on the fire service as the "first line of defence" in an emergency involving dangerous goods or hazardous wastes. This includes not only fires, but also transportation accidents and spills involving these substances. Local fire departments are concerned about their liability and authority in responding to any event other than a fire. At the same time, they are concerned about the adequacy of their equipment and the availability of information and training that would assist them at the scene of a fire or accident involving dangerous goods and hazardous wastes.

Similar concerns were expressed throughout the Province, but expressed with greater urgency in those communities dependent on volunteer fire services. Volunteers are expected to respond to emergencies, undergo training and participate in fund raising events, all of which take considerable time. Often this requires a volunteer to take time off work without pay. As the situations volunteers are expected to respond to become more complex, the demands on volunteers increase. Fire officials who met with the Task Force were concerned about these increased demands.

If Nova Scotians are to continue to depend on the fire service to act in emergencies involving

dangerous chemicals and hazardous waste, then the authority of the fire service must be clearly specified. While their powers with respect to a fire appear clear, it is less certain what authority they have in dealing with transportation accidents and spills of dangerous goods and hazardous wastes. This is particularly important given that a fire service may be held liable for the actions it takes, or does not take, in these situations. The Task Force has concluded, therefore, that the authority and liability of the fire service should be studied and clarified by the Province in consultation with the fire service and municipal governments.

In addition to the local fire service, agencies of the municipal, provincial and federal governments play a role in responding to emergencies or in planning for emergency events. In discussions with local officials, there was confusion over who is responsible for taking the lead in emergencies involving dangerous goods or hazardous wastes. This might stem from the unclear mandate of the fire service. On the other hand, it may indicate deficiencies in communications or training. Whatever the reason for the problem, the Task Force believes that a clearly defined chain of command and assignment of responsibilities is required to address the various types of incidents that might be encountered when responding to emergencies. Most important is the need to communicate this to the parties who are involved in emergency response and to emphasize it through planning and training.

Throughout the Task Force meetings fire officials expressed the need for access to equipment and training that would assist them in protecting property and lives from dangerous chemical emergencies and, at the same time, minimize risks to the fire fighters. The emergency response equipment needs of the fire service are costly. In some areas of the Province, equipment would not be required on a sufficient number of occasions to justify its expense. However a similar situation exists with the general equipment needs of the fire services and as a solution, mutual aid groups have been established. These groups allow fire fighters and equipment in a region to come to the aid of a community whose fire service requires assistance.

If the dependence on volunteer fire services is to continue, the Task Force believes that financial assistance will be required to equip local fire services. However, recognizing the need to provide equipment within a reasonable cost framework, the Task Force believes that the use of mutual aid regions should be considered as the basis for providing assistance. It is the conclusion of the Task Force, therefore, that there is a need for the local fire service to have access to equipment suitable for responding to dangerous goods and hazardous wastes emergencies. Equipment needs and funding arrangements should be identified by the Department of the Environment, the Emergency Measures Organization, and the Provincial Fire Marshall and other appropriate agencies in consultation with the local fire services. To ensure the efficient use of equipment, the Task Force concludes that consideration should be given to the mutual aid system which has been developed.

Many local fire officials were concerned with the lack of training their fire fighters receive for dealing with dangerous goods and hazardous wastes. Training opportunities are available, although for many fire services they are too expensive. In some areas the number of fire fighters who would benefit from some level of training is considerable and beyond the budget of small departments. To some extent, this problem is being addressed by training programs undertaken by the Department of the Environment and the Emergency Measures Organization. These short sessions are held in the regions thus reducing the time and cost to volunteers and the fire service. The Task Force believes that there is a need to evaluate and improve the training of the local services in responding to chemical emergencies taking into account the cost of training and the level of training required to meet the needs of the firemen and the community. The Task Force believes that this evaluation should be undertaken by the Department of the Environment, the Emergency Measures Organization and the Fire Marshall in consultation with the local fire services.

Based on submissions, and discussions in public sessions, the Task Force believes that a small, well-trained provinical response team is required for emergencies involving dangerous goods and hazardous wastes. The primary function of the response team would be to assist local officials when emergencies occur. The response team should have access to

equipment to combat emergencies. It should be capable of providing some training and should maintain inventories of equipment and other resources that could be made available in the event of an emergency.

The ability to respond to an emergency in a safe and efficient manner is dependent on the availability of adequate information. In transportation, the manifest and placard systems under federal and provincial legislation is a significant step forward. The Task Force believes that there is a requirement for persons storing and using dangerous goods to make this information available to the local fire services so that action can be taken in the event of an emergency. Therefore, the Task Force has concluded that those responsible for dangerous goods and hazardous wastes should be required to file information on the type, quantity and location of these materials with the local municipality and fire department and copies of inventories should be kept on-site. Further, the Task Force concludes that persons using buildings to store hazardous wastes should be required to post a placard similar to the system used in the Dangerous Goods Transportation Act. This would act as an additional warning to fire fighters and other emergency personnel.

There is currently no mandatory requirement in Nova Scotia to report a spill of a dangerous good or hazardous waste. This could result in several problems. A spill which has not been effectively managed could result in future environmental damage. Even delayed notification may produce severe effects and costs, which could be avoided if prompt notification had been received. Because of these problems, some groups suggested that there should be a mandatory requirement to report spills of hazardous wastes and dangerous goods, and the Task Force agrees.

A concern was expressed that the public should be notified of hazardous situations such as spills and other emergency events. Without this information, it is felt that the public is unable to evaluate the risks to themselves or to have confidence in the emergency response and clean-up. The Task Force agrees with this suggestion and has concluded that a policy must be developed to notify the public of spills and other emergency events and to inform them of the mitigative actions which are being taken.

Following the fire at the Maple Leaf Farms Limited pesticides storage warehouse in Canning, the Task Force received submissions from individuals proposing that an evaluation of the response should be undertaken after the emergency by the lead agency. The purpose of the evaluation would be to determine whether improvements could be made in future responses. The evaluation, as well as any continuing monitoring studies, should also be made public. The Task Force agrees with this not only because it would provide an opportunity to make any necessary changes or improvements to emergency response planning but also because it would provide a very clear public indication of the extent to which a community is, or is not, prepared for such events.

The recommendations of the Task Force regarding the emergency response capability of the Province are:

Recommendation 13:
Role of the Fire Service
The Minister of the Environment should form a Working Group consisting of representation from the Department of the Environment, the Emergency Measures Organization, other appropriate provincial agencies, municipal governments, and the local fire services to examine and make recommendations respecting the role and mandate of the local fire service in responding to emergencies involving dangerous goods and hazardous wastes.

Recommendation 14:
Training and Equipment
The Minister of the Environment should instruct the Working Group established as a result of Recommendation 13, to examine and make recommendations respecting the equipment and training needs of local fire services. The need for equipment and training must be based on the role which is defined for the fire service.

The Working Group must take into consideration the volunteer nature of most local fir services in Nova Scotia and evaluate the role and responsibilities of various agencies an the chain of command in emergency response situations.

Recommendation 15:
Provincial Emergency Response Team
The Minister of the Environment should establish a well-trained and equipped emergency Response Team to coordinate provincial responses to dangerous goods and hazardous waste emergencies. The Response Team should act in support of local response initiatives. The Response Team should be responsible for providing training programs and for acquiring access to provincial and local resources that may be required in dangerous goods and hazardous waste emergencies.

Recommendation 16:
Requirement To File Inventories
The Minister of the Environment should require all persons using or generating a dangerous good or hazardous waste to file an inventory, and material safety data sheets, with Municipal officials and the local fire service. The Minister should also require persons to update the inventory on the site where dangerous goods or hazardous wastes are used or stored. This requirement should be stipulated as a regulation under the Dangerous Goods and Hazardous Wastes Management Act.

Recommendation 17:
Posting of Buildings
The Minister of the Environment should adopt a regulation under the Dangerous Goods and Hazardous Wastes Management Act requiring persons storing dangerous goods and hazardous wastes to erect a sign, approved by the Minister, indicating that dangerous goods and hazardous wastes are stored on the premises.

The system should be similar to that adopted under the Dangerous Goods Transporation Act.

Recommendation 18:
Reporting Spills and Emergencies
The Minister of the Environment should adopt a regulation under the Dangerous Goods and Hazardous Wastes Management Act requiring persons responsible for dangerous goods and hazardous wastes to notify designated emergency response personnel in the event of a spill or the release of dangerous goods or hazardous wastes.

The Minister should adopt a policy that would require public notification in the event of a spill or the release of dangerous goods or hazardous wastes into a public area.

Recommendation 19:
Evaluating Emergency Response
The Minister of the Environment should require that an evaluation is performed of the emergency response when dangerous goods or hazardous wastes could be or are released into public areas. The results of this evaluation should be made publicly available.

5.2.4. Licencing of Persons Responsible For Handling Hazardous Wastes

The Task Force has concluded from its discussions with government officials, industries, organizations and individuals that the safe management of dangerous goods and hazardous wastes necessitates the development of regulatory controls that address all aspects of the dangerous goods and hazardous waste life cycle. The Province currently has controls over the sale, use, storage, transportation and disposal of some dangerous goods and hazardous wastes. For example, the Province has adopted a Pest Control Products Act and the Dangerous Goods Transportation Act. It is the conclusion of the Task Force that controls for the management of dangerous goods and hazardous wastes could be augmented and further concludes:

- All persons responsible for the handling of a hazardous waste should be licenced; this includes generators, transporters and disposers.
- All employees of licence holders responsible for the generation, transportation or disposal of hazardous wastes should be appropriately trained as a condition for their employer obtaining and maintaining a licence.
- All persons handling a hazardous waste should be required to provide proof of adequate liability insurance or proof of financial assurance.

Discussion

Many individuals who appeared before the Task Force were concerned that all aspects of the dangerous goods and hazardous waste life cycle should be controlled. The Task Force agrees with this principle. However, the Task Force also recognizes that the level of control required between dangerous goods and hazardous wastes may differ owing to the economic value associated with dangerous goods.

The economic value of dangerous goods provides an incentive to those using, storing or transporting them to ensure that they are properly handled. One concern of the Task Force with respect to dangerous goods is to ensure that they are properly stored to alleviate the potential for accidents. Therefore, the Task Force has made recommendations elsewhere in this Report requiring persons storing dangerous goods to provide inventories to appropriate officials and to ensure that buildings used for the storage of dangerous goods are properly placarded.

With respect to the transportation of dangerous goods, the Task Force believes that the way-bill and placarding systems under the Dangerous Goods Transportation Act will ensure an effective level of control over the transportation of dangerous goods. Although the Task Force has concluded that there is not a need at present to licence persons responsible for handling dangerous goods, it supports the licencing system established under the Nova Scotia Pest Control Products Act for operators and vendors of commercial pest control products. Public concern with these products and their extensive distribution to consumers, necessitates a licencing system.

Since hazardous wastes do not have an economic value, unless they are reused or recycled, the proper management of hazardous wastes is dependent on the good will of the person handling it and/or regulatory controls. It is the opinion of the Task Force that all aspects of hazardous waste handling should be regulated under a licencing system. A generator should be required to have a licence specifying the types and quantities of hazardous wastes that may be produced and the means by which it must be disposed. Waste haulers should be licenced for specified hazardous wastes. Finally, facilities for the disposal of hazardous wastes should be licenced and should only be permitted to accept those wastes they are approved to handle. Licences in any category should not be transferable.

These controls, combined with a fully implemented manifest system for the transportation of hazardous waste will provide an appropriate degree of control over the final disposal of hazardous wastes. It is the opinion of the Task Force that without controls over all three sectors (generators, facilities and transporters) there can be no assurance that hazardous wastes will be properly managed.

Persons handling hazardous wastes should be properly trained in how the wastes are to be treated, stored, transported or disposed. Obviously, the number of persons who could potentially require training would be considerable. However, a licencing system without training of those persons who will potentially handle hazardous waste would be meaningless. Employers must be required to ensure that their employees are aware of the hazards associated with the wastes, the proper means of handling or disposing of them and the required emergency response in the event of an accident or spill. These measures are important not only for public safety but also the safety of workers. Training programs for use by employees should be developed with the joint cooperation of government and industry.

The Task Force is of the opinion that all licence holders must be required by the Province to demonstrate that they have reasonable insurance, or are prepared to provide financial assurance sufficient to compensate for damages that may occur as a consequence of hazardous waste management activities. This will not only ensure better waste management practices, but it will also provide a further incentive for employers to train persons in their employ responsible for handling hazardous wastes.

The Task Force recognizes that the issue of environmental liability insurance is extremely complex. At present, many companies are unable to obtain environmental liability insurance or have been informed that their existing policies do not cover environmental liabilities. The release of a hazardous waste into the environment either because of an accident, or the failure of management systems, can produce considerable damage. The extent of the hazard, and all of the people who may be affected, can remain unknown for a very lengthy period.

At present the Task Force is unable to recommend whether there should be statutory limits on the liability of persons responsible for damage caused by hazardous wastes. The Task Force is also not able to recommend whether there should be some mechanism, other than existing judicial remedies, for compensating individuals who may be affected, either in the short or long term as a result of hazardous waste management practices. While both of these issues were raised in public sessions, the Task Force does not feel that it has sufficient information upon which to make specific recommendations. Not withstanding the complexity of these issues the Task Force has concluded that persons licenced to handle hazardous wates should be required to demonstrate financial assurance.

With respect to the licencing of persons, and the training of hazardous waste handlers, the Task Force recommends:

Recommendation 20:
Licencing
The Minister of the Environment should require persons generating, transporting or responsible for disposing of a hazardous waste to be licenced. The terms and conditions of the licence must establish the type and quantity of waste, and special precautions that must be taken in handling the waste and the approved means for disposing of the waste. Licences must not be transferrable.

Recommendation 21:
Training of Employees
The Minister of the Environment, should ensure that all persons holding a licence provide training, acceptable to the Minister, for their employees consistent with the terms and conditions of the licence.

Recommendation 22:
Environmental Liability Insurance and Financial Assurance
The Minister of the Environment should require applicants for a licence to have reasonable insurance or to provide proof of financial assurance, acceptable to the Minister.

5.2.5. Storage of Dangerous Goods and Hazardous Wastes

In its Conclusions and Recommendations respecting Waste Management Facilities, the Task Force stated that it is their opinion that the storage of hazardous wastes is not an acceptable, long-term solution to this issue. With respect to the storage of hazardous wastes, the Task Force has also concluded:

- Hazardous wastes should not be permitted to be stored for a period in excess of one year after they have been generated.
- Regulations are needed for the temporary storage of hazardous wastes. These should include the type of containers wastes must be stored in and the facilities which should be provided for their storage. Regulations are also needed for the security of the storage site and the training of any persons who have access to the site.

Discussion

The Task Force believes that it would be inconsistent to develop transfer facilities for the secure, temporary storage of hazardous wastes, as it has recommended, without ensuring the adequacy of generator storage facilities. At the same time, the Task Force has argued that is is the opinion of Nova Scotians that wastes should not be generated without an approved disposal method either in Nova Scotia or elsewhere. To allow generators to store hazardous wastes at their sites permanently or for extended periods would be contradictory to this principle. It is the opinion of the Task Force that generators should not be allowed to store hazardous wastes for a period in excess of one year. The one exception to the one year limit is the storage of PCB's which has been discussed earlier in this Report. The Task Force believes that it is important for the regulations to prohibit generators from moving wastes to other sites to avoid the intent of the regulations.

The Task Force recommends:

Recommendation 23:
Prohibition on Storage in Excess of One Year

The Minister of the Environment should adopt regulations under the Dangerous Goods and Hazardous Wastes Management Act to prohibit the storage of hazardous wastes for a period in excess of one year. Persons storing wastes should be required after this one year period to ship wastes to an approved disposal facility. This provision should not apply to the existing secure storage of PCB's.

Recommendation 24:
Storage Regulations

The Minister of the Environment should adopt regulations under the Dangerous Goods and Hazardous Wastes Management Act which among other things specify the types of containers that are permissible for the storage of wastes, the facilities that are to be provided by generators for the temporary storage of their wastes, security for storage facilities at generator sites, and training for persons with access to the storage facilities.

5.2.6. Transportation of Hazardous Wastes

Several municipalities and individuals were concerned with the transporation of dangerous goods and hazardous wastes through their communities. Some generators were unfamiliar with the requirement to manifest wastes. The Task Force has concluded:

- The full implementation of a provincial manifest system for the transportation of hazardous wastes is a necessary component for ensuring the life-cycle management of hazardous wastes.

Discussion

The Department of the Environment has begun development of a manifest system for the transportation of hazardous wastes as required by the Nova Scotia Dangerous Goods Transportation Act. At present, however, sufficient resources have not been made available within the Department of the Environment to ensure the full implementation of this system. Most transporters who are submitting manifests are doing so primarily as a consequence of their familiarity with the legislation in this area. Without the data that a manifest can generate, it will not be possible to ensure the life-cycle management of hazardous wastes.

The Task Force recommends:

Recommendation 25:
Manifests for Transportation of Hazardous Wastes

The Minister of the Environment should provide the resources for the full implementation and development of a provincial hazardous wastes manifest system, similar to the Federal process. Transporters of hazardous wastes should be required to submit a manifest to the Department of the Environment for the shipment of hazardous wastes.

5.2.7.
Enforcement and Penalties

With respect to the enforcement of laws and the penalties for the violation of laws, the Task Force has concluded:

- Laws and regulations pertaining to dangerous goods and hazardous wastes should be stringently but fairly applied.
- Penalties that are too low will not encourage appropriate behavior.

Discussion

There is substantial public agreement that environmental acts and regulations for the control of dangerous goods and hazardous wastes should be stringently applied. They should clearly establish requirements and prohibitions necessary to ensure the safe management of these materials. Once adopted, the regulations must be enforced consistently and fairly. Penalties should be set at a level to provide an incentive to those affected by the regulations, and impose a sufficient burden on them, to comply. The Task Force agrees with this view of enforcement and penalties.

The current Dangerous Goods and Hazardous Wastes Management Act provides for a fine of $10,000 or a prison term not to exceed one year. The Task Force is of the opinion that as regulations are developed and implemented, the penalty provisions should be assessed to determine whether they are sufficient.

With respect to enforcement of regulations and penalties for non-compliance, the Task Force recommends:

Recommendation 26:
Enforcement and Penalties

The Minister of the Environment should ensure that regulations under the Dangerous Goods and Hazardous Wastes Management Act are stringently and fairly applied.

The Minister should periodically examine the penalty provisions of the Act to ensure that they provide an appropriate incentive for promoting acceptable management practices.

5.2.8.
Public Education and Consultation

The Task Force heard from many sources that there is a pressing need for public education and consultation on dangerous goods and hazardous waste management. The Task Force has already drawn conclusions and made recommendations with respect to education and consultation on the siting of waste management facilities. With respect to general public education and consultation needs on this issue, the Task Force has concluded that:

- A public understanding of the issue must exist before support can be generated for a dangerous goods and hazardous waste management strategy. This support is mandatory if government is to initiate appropriate programs. The public (individuals, organizations, industries) must be part of any decision-making process with respect to implementation of the strategy.
- Without public education and consultation on a continuous basis, uninformed opinion will dictate government policy.
- Information on dangerous goods and hazardous wastes must be timely and factual. It must be perceived as being from trusted and qualified sources.

Discussion

By establishing the Task Force and providing it with a mandate to propose a strategy based on public consultation, the Government has recognized the necessity for public involvement in decision-making with respect to dangerous goods and hazardous wastes management. Public demand and willingness to be involved in the process was reflected in the numbers of submissions which the Task Force received and the number of people who came to public sessions.

Groups who met with the Task Force argued, however, that the consultation process should not end with the submission of the Task Force's report. They pressed for continued con-

sultation on any regulations or plans that are established by government for controlling dangerous goods and hazardous wastes. The Task Force agrees and has therefore recognized throughout this report, the need for public consultation during implementation of a waste management plan.

Consultation can only be effective, for government and the general public, if there is a common level of understanding of dangerous goods and hazardous waste management issues in Nova Scotia. It is the opinion of the Task Force that government has a responsibility to disseminate information on the nature of the dangerous goods and hazardous waste management problems in Nova Scotia, the efforts that are being made to address them and the management activities which must be undertaken in the future. Without this information, public consultation will not only be ineffective, but large numbers of Nova Scotians will continue to be unaware of the problems or highly dependent on sources other than government for information. Some of these sources may not have accurate information or have a self-interest in creating a particular public viewpoint. The Task Force believes, therefore, that there is a pressing need for more and better information to be distributed to the public on dangerous goods and hazardous waste management issues.

The Task Force believes that the government should be concerned that many individuals who appeared before it were of the opinion that any information from government on this issue is suspect. The Task Force believes that this opinion may have been created by a past unwillingness to be as frank and open, on a continual basis, as may have been warranted when dealing with dangerous goods or hazardous waste management issues. While some individuals will always be suspicious of government motives, the Task Force believes that an information program founded on the public's right to know about hazardous situations that could affect them will generate the degree of public confidence, participation and support necessary to implement plans and practices for dangerous goods and hazardous wastes. It is crucial, therefore, that public information be timely, factual and perceived as being from qualified sources.

Government does not have the sole responsibility for informing the public. Industry also has its responsibility to inform the public of what it is doing and how it is managing its operations. This could include general press releases, information brochures, plant tours and public information sessions with the general public and local municipal councils. It is also important that industry keep the public informed during emergency situations.

Recommendation 27:
Establishment of a Public Affairs Section
The Minister of the Environment should establish within his Department a section of qualified and experienced individuals with responsibility for public education, public relations and public consultation. This section should be responsible for managing the Department's external relations, the preparation and distribution of educational materials and for organizing public consultation programs on dangerous goods and hazardous wastes and all other environmental issues.

The Minister should adopt as a general policy the public's right to know about hazardous situations that could affect them.

Recommendation 28:
Industrial Information Programs
The Minister of the Environment should require industry to make available to the public information regarding spills or accidents that may affect members of the public.

The Minister of the Environment should encourage industry to undertake public information programs.

5.2.9.
Reuse, Reduction, Recycling and Recovery

Many of the groups and organizations who met with the Task Force were of the opinion that efforts to reduce, recycle and recover dangerous goods and hazardous wastes should be encouraged to minimize the volume of hazardous wastes produced in Nova Scotia. Many companies in Nova Scotia have benefited financially from processes that either reduce the volume of chemicals used or allowed them to recycle a portion of their hazardous wastes. It is the opinion of the Task Force that government regulation has a significant role to play in encouraging both existing companies to reuse some portion of their dangerous goods and new companies to take advantage of a recycling opportunity. The Task Force has further concluded that:

- Environmental regulation can produce economic benefits and simultaneously result in the reduction or recovery of dangerous goods.
- Regulations can be developed to encourage recycling and recovery.

Discussion

As a result of the recent ban on the landfilling of tetrachloroethylene waste in Nova Scotia, this waste is now being collected from drycleaning establishments and shipped out-of-province for recycling. While the regulation imposes a cost on drycleaners, who will in turn charge their customers, the public has benefited both from the removal of tetrachloroethylene from the waste stream and the creation of a new business opportunity. Other similar examples exist of the economic benefits that can emerge from the development and implementation of environmental policies. It is the opinion of the Task Force that environmental regulation is perceived too often as imposing costs and producing limited benefits. The Task Force does not agree with this perception. Environmental regulations can be used not only to provide a safer place in which to live and work, but they can produce measurable financial and economic benefits.

The Task Force does not believe that financial assistance programs should be used to support reuse and recycling of dangerous goods and hazardous wastes. The role of government in this area should be limited to providing the climate which makes reuse and recycling viable. In this way, industry will introduce sustainable recycling programs.

The Task Force recommends:

Recommendation 29:
Promoting the 4 R's

The Minister of the Environment should consider the potential for encouraging reuse and recycling when developing regulations for dangerous goods and hazardous wastes.

The Minister should consult with industries that generate hazardous wastes, or are interested in the recovery of hazardous wastes, when developing regulations.

5.2.10.
Public Institutions

The Task Force heard from representatives of many school boards, universities and hospitals who are concerned with the manner in which dangerous goods and hazardous wastes are managed within their institutions. Based on these discussions, the Task Force has concluded:

- Emergency response personnel require better information on the dangerous goods in schools, universities and hospitals. Inventories must indicate the location of chemicals which are stored within the institution.
- School users would be better protected if new school construction provided adequate storage facilities for dangerous goods and if existing facilities were upgraded where appropriate.
- Dangerous goods and hazardous wastes management could be emphasized during teacher in-service training and curriculum development.
- Public institutions can reduce and control their dangerous goods and hazardous wastes by arranging for the periodic collection of unused chemicals and hazardous wastes and

providing for their transshipment to approved management facilities.

- Each school board, university and hospital could improve the management of their dangerous goods and hazardous wastes by designating a person within their institution to coordinate the development of hazardous waste management policies and the disposal of hazardous wastes.
- There is an urgent need to develop plans for the management of hospital waste. In particular, there is a need to examine the capacity and efficiency of incineration facilities for handling pathological and bio-medical wastes.

Discussion

School teachers and school board representatives who met with the Task Force believe that there is a need for local fire officials to be aware of the nature and location of dangerous goods which are stored in these institutions.

Some fire officials who met with the Task Force thought that greater consideration could be given when designing new schools to provide for adequate dangerous goods storage. They also believed that there was a need to upgrade some facilities. Both fire officials and school teachers emphasized the need for inventories to be prepared and provided to local fire agencies. The Task Force agrees. At the same time, the Task Force is of the opinion that every effort should be made to ensure that only those dangerous goods which are required for instructional purposes are stored in schools. Surplus or outdated dangerous goods should be removed.

Since there are no adequate alternatives, many schools are disposing of their hazardous wastes either in the sewer system or with general school wastes. Teachers believe, and the Task Force agrees, that this does little to promote a better understanding among students of the dangers associated with improper hazardous waste disposal. While the Task Force recognizes that the volumes of hazardous wastes generated in schools are only a very small portion of the total hazardous waste stream, efforts to encourage the responsible management of hazardous wastes must begin in the schools.

During the Task Force meetings, it was learned that teacher in-service training has periodically emphasized dangerous goods and hazardous waste handling by laboratory instructors. In some school courses, hazardous wastes and the environmental problems that they pose have been addressed. The Task Force believes that these practices should be continued, and enhanced. At the same time, however, the Task Force recognizes that without adequate disposal facilities, these training and curriculum development programs will serve little purpose. Therefore, the Task Force believes that school boards should investigate hazardous waste management practices within their schools. This investigation should examine the necessity for the periodic collection and disposal of unused dangerous goods and hazardous wastes. The Department of Education should assist school boards in this regard by providing guidelines for the disposal of dangerous goods and hazardous wastes.

Universities experience similar problems to those in public schools with managing dangerous goods and disposing of hazardous wastes. The Task Force was impressed with the collection and disposal system of the Chemistry Department at St. Francis Xavier University in Antigonish. Adoption of these practices by other institutions would contribute significantly to the training of responsible individuals.

Some universities indicated a willingness to act as resource centres for their communities by assisting them in providing technical information and advice. While their time is obviously limited, the technical and organizational capability that exists in the universities could be used for emergency planning and public education programs.

The Porter Dillon Special Waste Management Study for the Metropolitan Halifax-Dartmouth Area indicated some difficulty in obtaining information on hazardous waste management practices in universities. The Task Force is aware that some universities have established occupational health and safety committees that are examining the issues associated with dangerous goods and hazardous waste management in their institutions. The Task Force

agrees with the authors of the Special Waste Management Study that each university should designate a coordinator for dangerous goods and hazardous waste management in the institution.

Hospital workers and administrators are very concerned with the management of hazardous wastes from their institutions. The Task Force is pleased to note that the Nova Scotia Department of Health has established a provincial committee to examine the issues associated with the management of hospital wastes. As a priority, this Committee should examine the availability of incinerators at hospitals and make any necessary recommendations to improve their capacity and effectiveness.

As with the universities, the Porter Dillon Study indicated the need for hospitals to designate a coordinator for dangerous goods and hazardous waste management. The Task Force supports this recommendation. The function of the coordinator would be to advise hospital management on dangerous goods and hazardous wastes management policies and plans.

With respect to the management of dangerous goods and hazardous wastes in public institutions, the Task Force recomends:

Recommendation 30:
Inventories for Schools, Universities and Hospitals
The Ministers of Education and Health should require local school boards, universities and hospitals to prepare inventories of dangerous goods and file these with local fire officials. Inventories should identify the location of dangerous goods that are stored within these institutions.

Recommendation 31:
New Schools and Storage of Dangerous Goods
The Minister of Education should ensure that new schools provide adequate storage for dangerous goods. The Minister should assess the adequacy of storage facilities in existing schools and require the necessary improvements.

Recommendation 32:
Collection of Hazardous Wastes from Schools
The Minister of Education should require each School Board to investigate the feasibility of a hazardous wastes collection system for schools under their jurisdiction and the Board should make appropriate arrangements for disposal.

Recommendation 33:
Storage and Disposal Guidelines
The Ministers of Education and Environment should prepare guidelines for the storage and disposal of dangerous goods and hazardous wastes in schools.

Recommendation 34:
Training
The Minister of Education should investigate the adequacy of in-service training for school laboratory instructors. The Minister of Education should examine the extent to which the current curriculum addresses the issue of hazardous waste management and how the curriculum can be improved in this area.

Recommendation 35:
Universities and Disposal of Hazardous Wastes
Universities in Nova Scotia should establish management systems in their laboratories, and elsewhere in the university, for the collection and disposal of hazardous wastes.

Each university should appoint a coordinator for hazardous waste management to ensure the establishment and operation of an effective management system.

Recommendation 36:
Hospitals and Hazardous Waste Disposal
The Minister of Health should instruct the provincial committee which was established by the Department of Health for examining hospital hazardous waste management, to investigate the adequacy and effectiveness of incineration facilities.

The Minister of Health and Environment should develop guidelines for the operation of hospital incinerators to ensure their safe operation.

Recommendation 37:
Hospital Coordinators
The Minister of Health should ensure that hospitals appoint a coordinator for dangerous goods and hazardous waste management with responsibility for developing a management plan for dangerous goods and hazardous wastes.

The Ministers of Health and Environment should assist these coordinators in developing hospital waste management plans.

5.2.11.
Household Hazardous Wastes

Some individuals who appeared before the Task Force were concerned with household hazardous wastes that are going to municipal landfills. The Task Force was told that a failure to deal with household hazardous wastes might jeopardize the credibility of any hazardous waste management plan. Given this, the Task Force has concluded that:

- There is insufficient opportunity for or promotion of safe collection and disposal of household hazardous wastes.

Discussion
The Task Force believes that developing public support for a waste management plan will be more difficult if individuals can continue to dispose of their household hazardous wastes without any concern for their long-term impact. Failure to consider household hazardous wastes will mean that an opportunity for public education will be lost. On the other hand, an on-going system for collecting and disposing of household hazardous wastes may be more costly to a municipality than the benefits would warrant. It is generally argued that properly designated and operated municipal landfills are capable of accepting the quantities of hazardous wastes generated by households.

The Task Force believes that public education programs could be designed to provide information on reducing the volume of household hazardous wastes which are generated and the means for properly disposing of these. The Department of the Environment has made some limited initiatives in this area but these could be augmented.

The Task Force believes that there are volunteer groups throughout the Province who are willing to participate with the Department of the Environment in pilot projects for the periodic collection of hazardous wastes. This opportunity should be taken by the Department.

The Task Force recommends:

Recommendation 38:
Household Hazardous Waste
The Minister of the Environment should investigate household hazardous waste education, collection and disposal programs in other jurisdictions.
The Minister should call on interested groups to join in a community-based pilot project for household hazardous wastes to test and encourage public interest in the proper management of these wastes.

5.2.12.
Waste Oil

The Task Force was requested by the Minister of the Environment to make recommendations respecting the regulation of waste oil. In order to meet the Minister's request, the

Task Force met with companies in Nova Scotia involved in the collection and reuse of waste oil. Based on these discussions and the Task Force review of the situation in Nova Scotia and elsewhere, it has been concluded that:

- The current regulation of waste oil in Nova Scotia is deficient and has resulted in environmental problems.

Discussion

The Nova Scotia Minister of the Environment referred the issue of waste oil management to the Task Force because of two concerns. First, waste oil can be used as a convenient menas of discarding and disguising hazardous wastes. Recently, for example, PCB's have been detected in waste oil.

The Minister's second concern was that waste oil can contain elevated levels of lead, cadmium and other dangerous substances. If improperly burned, or used for road oiling, contaminants can be released to the environment. Other provinces in Canada and the Environmental Protection Agency in the United States have adopted, or are considering the adoption, of waste oil regulations to control these problems. Controls in other jurisdictions have resulted in the importation of waste oil into Nova Scotia which does not meet standards in other provinces. The Task Force is concerned that without regulations, this situation could continue and worsen.

There is a significant industry in Nova Scotia involved in the recovery and reuse of waste oil for burning, road oiling and re-refining. Some industry representatives recognize that it is in their interest to ensure that they are collecting and selling a safe product.

With respect to the management of waste oil, the Task Force recommends:

Recommendation 39:
Regulations

The Minister of the Environment should adopt regulations under the Dangerous Goods and Hazardous Wastes Management Act to control the use and disposal of waste oil and contaminated waste oil.

The regulations should specify allowable limits of contaminants for the burning of waste oil in prescribed boilers.

Recommendation 40:
Testing Procedures

The Minister of the Environment should require product testing of waste oil to ensure that it meets the regulated standards.

Recommendation 41:
Imported Waste Oil

The Minister should prohibit the importation of waste oil into Nova Scotia unless the shipper has received approval from the Minister.

Recommendation 42:
Dilution of Contaminated Waste Oil

The Minister of the Environment should prohibit the dilution of contaminated waste oil as a means of meeting regulated standards.

Recommendation 43:
Road Oiling

The Minister of the Environment should prohibit the use of waste oil as a dust suppressant on roads.

5.2.13.
Abandoned Waste Sites

Several presenters suggested to the Task Force that there is a need for existing information on abandoned land waste disposal sites to be released and for an assessment of priority sites. The Task Force agrees with these proposals and has concluded that:

- Failure to publicly release the Abandoned Land Waste Disposal Sites Report (Phase I) is contributing to public confusion and public fears.
- There is a necessity to initiate the assessment phase of the Abandoned Land Waste Disposal Site Study.

Discussion

In 1983, the Province of Nova Scotia and the Government of Canada entered an agreement to study closed or abandoned land waste disposal sites in Nova Scotia that are currently causing, or have the potential to cause, environmental pollution problems. The study was to be conducted in three phases. Phase I was to involve the identification of sites and a compilation of data on the nature and quantity of wastes which were disposed of in these sites. Phase II provided for a preliminary assessment of sites. Phase III was to undertake an examination of sites and to make recommendations for mitigation of potential problems.

As stipulated by the Terms of Reference for Phase I, closed or abandoned land waste disposal sites were identified and assigned priority. A total of fifteen Priority One Sites, which met the following criteria were identified: large waste volume, medium or high concern wastes, shallow clay content, permeable bedrock, leachate draining from the site, close proximity to residential development and municipal water supplies.

Phase I of the study has been completed and some of the information has been released. A final, complete report has not been published or publicly distributed. Therefore, based on limited information, some individuals and committees have the impression that the study identified at least 15 "hazardous" waste disposal sites. The public is confused and fearful because they are unfamiliar with either the purpose of the study or its methodology or, indeed the meaning of Priority One Sites. At the same time, the limited release of information has caused problems for those companies and agencies which are currently responsible for these sites.

Since the signing of the original agreement in 1983, the Federal Government has curtailed its funding for abandoned land waste disposal site studies. According to Federal officials, funds for this program were available for only a limited period of time. While it may not be possible for the Province to complete all phases of this study as quickly as it would be if Federal assistance were available, the Task Force believes that the work of the study should be completed. If it is not, public confusion, cynicism, and fear will continue.

Based on these conclusions, the Task Force recommends:

Recommendation 44:
Release of Phase I Study

The Minister of the Environment should publicly release the Abandoned Land Waste Disposal Site Study (Phase I) and make staff available to discuss and explain the study with those interested.

Recommendation 45:
Phase II of Study

The Minister of the Environment should initiate Phase II of the Abandoned Land Waste Disposal Site Study. Based on the results of these preliminary investigations, mitigative measures, if necessary, should be undertaken. During all phases, the public must be kept fully informed.

5.2.14.
Role of Municipal Governments

With few exceptions, municipal governments who met with the Task Force were concerned with the issue of dangerous goods and hazardous waste management. Based on these discussions, the Task Force has concluded the following with respect to the role of municipal governments in managing dangerous goods and hazardous wastes:

- Municipal governments, through land use strategies, by-laws and the operation of municipal facilities, could play a potentially significant role in managing dangerous goods and hazardous wastes.
- Municipal governments need to be informed of dangerous goods and hazardous wastes in their jurisdiction and consulted on plans for managing dangerous goods or hazardous wastes.

Discussion

The Task Force believes that municipal governments could play a significant role in dangerous goods and hazardous waste management through land use strategies and by-laws, development permits and the operation of municipal facilities for solid waste and sewage waste treatment. The Task Force heard from municipal officials that there is an interest in playing a role provided that the required resources and training are made available.

Under the Provincial Planning Act, the Province may adopt land use policies necessary to protect the interests of the Nova Scotians in the use and development of land. The intent of these policies is to provide a framework for municipal planning by guiding the development of municipal strategies and by-laws.

It was suggested that based on a provincial land use policy, municipal strategies and by-laws could be used to regulate the location of commercial operations responsible for managing dangerous goods and hazardous wastes. With strategies and by-laws in place, municipal development permits could be used as a mechanism for collecting information on those persons using or generating dangerous goods or hazardous wastes, especially in small, commercial establishments. Although there have been no provincial land use policies adopted to date, a provincial land use policy for dangerous goods and hazardous waste management should be investigated.

Some municipalities were concerned that dangerous goods and hazardous wastes are used, generated, disposed or transported through their jurisdictions without their knowledge. Elsewhere in this Report, recommendations have been made for providing inventories of dangerous goods to local governments and fire departments. This information should assist municipalities in preparing emergency measure plans for their communities. Also, recommendations have been made for an intra-provincial manifest system for the transportation of hazardous wastes which should address some of the concerns of local governments.

The Task Force believes that it is important for municipal governments to be fully informed of any plans that could contribute to the volume of dangerous goods and hazardous wastes in their jurisdictions. This is critical not only for future municipal land use planning, and local emergency measures planning, but it is also an important step in building public confidence. The Task Force believes that it is the responsibility of the Department of the Environment, and of those proposing to handle dangerous goods and hazardous wastes to keep local governments informed.

The Task Force recommends therefore:

Recommendation 46:
Provincial Land Use Policies

The Minister of Municipal Affairs and the Minister of the Environment should examine the advantages of adopting a provincial land use policy for dangerous goods and hazardous wastes as a mechanism for ensuring the improved control of these substances.

Recommendation 47:
Informing Municipalities
The Minister of the Environment, in approving any work or undertaking that would involve dangerous goods and hazardous wastes should require that the appropriate municipal government to be informed of the procedures being put in place to ensure the effective management of dangerous goods and hazardous wastes.

Recommendation 48:
Siting Facilities
The Minister of the Environment should ensure that municipal governments are fully consulted early in the process for siting any central facility for managing hazardous wastes.

5.2.15.
Department of the Environment

The Task Force heard from several individuals and groups regarding the Department of the Environment and its responsibility and capacity to manage dangerous goods and hazardous wastes. Based on these submissions, the Task Force has concluded that:

- There is an overall lack of public confidence and trust in the willingness to deal with the issues of dangerous goods and hazardous wastes by the Government and the Department of the Environment.
- The Department of the Environment has insufficient resources to fulfill its mandate for dangerous goods and hazardous wastes management.

Discussion
National public opinion polls indicate that environmental issues are a major concern to Canadians. Surveys by the Voluntary Planning Board and the Halifax Board of Trade, and the numbers of people who made submissions to the Task Force, demonstrate that it is also a priority to Nova Scotians.

Repeatedly the Task Force heard from groups and individuals who felt a sense of frustration in attempting to obtain information from the Department of the Environment and in motivating the Department to respond to their problems. The Task Force recognizes that it is impossible to satisfy every public demand. Nevertheless, the sense of frustration that was expressed was widespread throughout the Province, and as a consequence, the Task Force believes that there is a lack of public confidence and trust in the Department of the Environment. This is a serious situation and if it is not resolved, it is the opinion of the Task Force that the Department will be unable to lead the implementation of a dangerous goods and hazardous wastes management strategy.

Elsewhere in this Report, the Task Force has made recommendations regarding public consultation and education. The Task Force believes that implementation of these recommendations is critical to building general public confidence and trust in the Department.

In order for the Department to provide the leadership for managing dangerous goods and hazardous waste resources, the necessary resources must be made available to it. The Phase One Report of the Task Force urged the Minister to establish a management level position within the Department of the Environment to coordinate the staff and activities which are currently available for dealing with dangerous goods and hazardous waste. The recommendations in this Phase II Report make this position even more urgent.

Recommendation 49:
Coordinator for Dangerous Goods and Hazardous Wastes
The Minister of the Environment should assign a coordinator for dangerous goods and hazardous wastes management. This position should be responsible for managing the various dangerous goods and hazardous waste management activities of the Department. This position must be provided with the manpower and resources sufficient to meet its mandate.

5.2.16.
Task Force

Some people who met with the Task Force made suggestions regarding future initiatives by the Task Force. Based on these, the Task Force has concluded:

- Continued public consultation on development and implementation of a dangerous goods and hazardous wastes management strategy will ensure that it meets public needs and has the support of those it is intended to serve.

Discussion

The Government, and in particular the Minister of the Environment, were praised by many groups for initiating the Task Force and for seeking public comment prior to the development and implementation of a hazardous waste management strategy. Many said that this was the first constructive opportunity they have had to influence government policy and that it should not end with the submission of the Task Force Report. The Task Force agrees with the need to continue public involvement in this very important issue.

Recommendation 50:

Public Release of Task Force Report

The Minister of the Environment should release the Report of the Minister's Task Force on Hazardous Waste Management. Copies of the Report should be made available to persons who indicated an interest in the Task Force and its proceedings. The report should be distributed to all libraries in the Province.

Recommendation 51:

Public Comment

The Minister of the Environment should establish a process that provides the opportunity for the public to comment on the Report of the Task Force and should incorporate these comments, with the recommendations of the Task Force, when developing and implementing a dangerous goods and hazardous waste strategy for Nova Scotia.

APPENDIX A
Task Force Terms of Reference

Nova Scotia Department of the Environment/Environmental Control Council Joint Task Force on Hazardous Wastes Terms of Reference (Phase I)

OBJECTIVE:

To examine the hazardous waste management problem in Nova Scotia and to file an action plan to deal with the problem.

PHASE I (SUMMER 1985)

Phase I of the Task Force program will result in a report and recommendation to the Minister, based on the following activities:

1. Identification of Existing Problems
   a) Inventory information (1980 information gaps and major wastes)
   b) Existing management practices (large and small generators)
   c) Identify problem areas (current & historical)
   d) Review existing regulatory procedures affecting storage & disposal (permit system)

2. Identify Outstanding Issues / Inadequacies
   a) Review of legislation (N.S., federal and comparison with other jurisdictions and enforcement)
   b) Review of administrative procedures
   c) Technical questions
   d) Pre-introduction examination process for new chemicals

3. Management Options (Existing)
   a) National and international
   b) Local

4. Current Initiatives
   a) National (Committees, standards, manifests, facilities)
   b) Local
   c) Inter-provincial waste

5. Consultation
   a) Identify publics
   b) Review procedures in other jurisdictions / Nova Scotia reports
   c) Integrate consultation recommendations with technical / policy components of strategy
   d) Immediate activities / contacts

APPENDIX B
Phase I Report Recommendations

RECOMMENDATIONS:

a) The Task Force recommends that it be authorized to develop a comprehensive dangerous chemicals and hazardous waste management plan for consideration by government. A comprehensive plan should address:

- requirements for upgrading existing practices;
- the need for any provincial facilities and the financial, legal and socio-economic issues associated with these facilities;
- opportunities for out-of-province treatment and
- opportunities for reuse and recycling.

b) In order to reflect the concerns of businesses and individuals who will be closely affected by any management plan, it is recommended that the Task Force be expanded to include representation from Industry (generators), Municipal Government and Environmental Interest Groups.

c) The Task Force recommends that a public education and consultation program be initiated to complement the activities of the Task Force. An outline of the proposed program is provided in Appendix C.

FINDINGS AND INTERIM RECOMMENDATIONS

The Task Force is aware that the development of a comprehensive management plan will take some time. It is also aware, however, that both it and the Department of the Environment can take a number of immediate steps that would improve dangerous chemicals/hazardous waste management before a plan is finalized. Those areas requiring some immediate action are as follows:

a) **Inventory**

FINDINGS

Although information on the volumes and sources of dangerous chemicals and hazardous wastes is sufficient to initiate development of a plan, improved inventory data for some areas will be required when defining and assessing management options.

Reliable inventory data would also be of assistance to environmental and emergency response personnel when spills or accidents occur.

Continuing mechanisms for maintaining reliable inventory information are necessary to anticipate and adapt the management plan to meet new requirements and to incorporate new technologies.

RECOMMENDATIONS

i) The Department should immediately initiate a province-wide inventory of hazardous wastes based on criteria used for the Metro Study. When finalized this information should be made publicly available and explained as a component of the public information/education program.

ii) The Task Force should immediately consider mechanisms for maintaining an accurate inventory of hazardous wastes and obtaining inventory data on dangerous chemicals.

b) **Current Handling Practices**

FINDINGS

i) Based on existing information, the Nova Scotia Department of the Environment can identify 23 major generators of hazardous wastes where modifications to existing handling practices are required or where monitoring to determine the acceptability of existing handling practices should be initiated.

ii) As inventory data is refined similar action should be taken to ensure compliance to standards for any other priority facilities which are identified.

iii) The Department should immediately develop and implement a system for tracking the intra-provincial movement of hazardous wastes in order to ensure the adequacy of storage facilities and the proposed disposal centre. Industries and transporters involved in generating and moving hazardous wastes should be informed immediately of the system.

c) Regulatory and Administrative Regime

FINDINGS

i) The current regulatory regime provided under the Environmental Protection Act is not adequate for dealing with all aspects of dangerous chemicals and hazardous wastes management.

ii) Departmental activities, programs and structures for hazardous waste management are loosely organized and motivated by external requests for assistance and public complaint.

RECOMMENDATIONS

i) Enabling legislation should be developed immediately by the Department to ensure the safe use, handling, storage and disposal of dangerous chemicals and hazardous wastes.

ii) Regulations should be developed in consultation with industry, other government agencies and interested public. The Task Force should assist in the preparation of regulations and in obtaining public comment on any proposed regulations.

iii) To improve coordination of activities, a departmental staff member be appointed as full-time departmental coordinator of dangerous chemicals/hazardous waste management. In order to reflect the priority of this issue, it is recommended that this be a management level position responsible for:

- coordinating activities both within the Department and between agencies of the Province and the federal government,
- devising and coordinating development of the manifest system,
- providing a support function to the expanded Task Force,
- and implementation of the management plan.

d) Interdepartmental and Intergovernmental Liaison

FINDINGS

Nova Scotia's participation on committees established to identify national and regional plans of action for hazardous wastes is important to ensure maximum interjurisdictional cooperation and efficiency. The Provincial contribution, however, is limited by a lack of coordination in the Department of the Environment and among other provincial agencies. There is inconsistent representation on the various interjurisdictional committees which may hamper an effective reflection of Nova Scotian needs in waste management.

At the same time national and regional cooperation is desirable and necessary, the Province cannot rely on external decisions or systems to dictate Nova Scotian priorities for hazardous waste management.

RECOMMENDATIONS

Recognizing Provincial responsibilities for the regulation of dangerous chemicals and wastes, participation should be continued in national and regional activities. Provincial participation should be the responsibility of the coordinator who will ensure that Nova Scotia's interests are clearly defined and strenuously represented in national or regional plans of action.

e) Public Consultation

FINDINGS

There is a serious lack of accurate information, specific to Nova Scotia, available to the public in Nova Scotia although there is a great deal of interest among many sectors in the issue of hazardous wastes.

RECOMMENDATIONS

The Department should immediately begin the development and distribution of basic public information about hazardous wastes and the situation in Nova Scotia.

APPENDIX C
Task Force Membership

CHAIRMAN:

Paul Buxton, P.Eng, is an Executive Member of the Environmental Control Council. He is Executive Director of the Annapolis Royal Development Commission, responsible for the restoration work in the Town. He has been responsible for the management and supervision of construction projects throughout Canada.

MEMBERS

Audrey Manzer, Dartmouth, has been Chairman of the Dartmouth Lakes Advisory Board for fifteen years, and has promoted constructive community participation on environmental and other issues. She is also active at the local and national level in community organizations such as the YWCA, and the Canadian Federation of University Women.

James Harrison, Dartmouth, is retired from the position of Environmental Officer at the Dartmouth Imperial Oil refinery. He is also a past member of the Nova Scotia Control Council, a past president of the Dartmouth Chamber of Commerce, and a Fellow of the Chemical Institute of Canada.

Mayor Harry Cook, Bridgewater, is the representative of the Union of Nova Scotia Municipalities to the provincial Environmental Control Council. He was a founding member of and continues to participate on the local watershed advisory committee. Mr. Cook has also been the operator of a petroleum delivery company in Bridgewater.

James MacDonald, Sydney, is the Executive Secretary and past Chairman of the Nova Scotia Environmental Control Council. He is the former President of Island Construction Ltd., and has been active in community and professional associations, including the Sydney and Industrial Cape Breton Boards of Trade, and the Cape Breton Construction Association. Mr. MacDonald is a member of the Board of Directors, Nova Scotia Power Corporation.

Duncan MacKay, P.Eng., Halifax, is an environmental engineer with the Department of the Environment. He has been involved in hazardous waste management for several years.

APPENDIX D
Task Force Brochure

Minister's Task Force
on Hazardous Waste Management
P.O Box 2107
Halifax, Nova Scotia B3J 3B7
(902) 424-5300

Chairman
Paul Buxton, P.Eng., Annapolis Royal

Members
Audrey Manzer, Dartmouth

James Harrison, Dartmouth

Mayor Harry Cook, Bridgewater

James MacDonald, Sydney

Duncan MacKay, P.Eng., Halifax
(NS Department of the Environment)

Nova Scotia

MINISTER'S TASK FORCE ON Hazardous Waste Management

Nova Scotia
Department of Environment

Honourable Guy J. LeBlanc
Minister

HAZARDOUS WASTE: IN EVERYONE'S BACKYARD

THE MANAGEMENT OF HAZARDOUS WASTES
IS ONE OF THE MOST IMPORTANT
ENVIRONMENTAL QUESTIONS OF THIS DECADE.

If you think that hazardous wastes don't concern you, think about the following:

1
between 50 000 and 100 000 tonnes of hazardous wastes are generated annually in Nova Scotia

2
hazardous wastes are generated by large industries; small businesses, such as furniture refinishers, printers, dry cleaners; institutions, such as laboratories, universities, hospitals; and by households

3
improper disposal of hazardous wastes can lead to contamination of drinking water, or other costly environmental damage.

We all have a stake in ensuring that hazardous wastes are managed responsibly and with the least possibility for environmental damage.

In July 1986, the Dangerous Goods and Hazardous Act was proclaimed in Nova Scotia. The Act serves to establish and clarify the provincial government's responsibility and authority to manage hazardous wastes, and ensures that the Minister has adequate power to act in an emergency. The legislation does **not** establish a long-term management plan. The management plan will be developed in consultation with interested Nova Scotians, to realistically meet the needs and address the concerns of the business community and the general public.

The Minister of the Environment has instructed a Task Force, representing the Environmental Control Council, business, industry, municipalities, and citizen organizations, to conduct a wide consultation program. During the next few months, the Task Force will be seeking expressions of interest from organizations and individuals.

PUBLIC CONSULTATION

Beginning Autumn, 1986, the Task Force will meet with interested parties throughout the province. The purpose of these sessions will be to learn about the concerns - environmental, social, and financial - and the suggestions of Nova Scotians about the management of wastes.

The Task Force is interested in hearing from large and small businesses, municipal agencies, professional associations, environmental and community groups, waste handlers, researchers, institutions, or any organization or individual with an interest in the issue.

Meeting locations will be identified on the basis of expressed interest. The Task Force will meet interested people individually and in an "open house" in each location.

Written submissions will be accepted.

THE TASK FORCE MANDATE

THE MINISTER HAS INSTRUCTED THE TASK
FORCE TO CONDUCT A COMPREHENSIVE REVIEW
OF ALL ASPECTS OF MANAGEMENT OF
DANGEROUS GOODS AND HAZARDOUS WASTES.

The Task Force will be looking to Nova Scotians to identify their concerns, to share experiences, and to make recommendations for long term management. Some obvious questions are:

1. Who is responsible for managing hazardous wastes - government? industry?
2. Does Nova Scotia need special facilities for the treatment and disposal of hazardous waste? If so, what?
3. On what basis would and should a community accept such facilities?
4. Who should finance and operate management facilities and procedures? industry? government?
5. What opportunities are there for cooperation - between businesses? - between provinces?
6. What opportunities exist for recycling or reuse, and how can they be enhanced?
7. What kind of public/consumer cost is acceptable?
8. How should waste handlers be regulated?
9. What protective measures should be in place during transport, storage and use of dangerous chemicals?

MINISTER'S TASK FORCE ON Hazardous Waste Management

BUSINESS REPLY CARD

☐ I am interested in meeting with the Task Force.

☐ I want to make a written submission.

☐ Please add me to the mailing list.

Name _____ Phone _____

Company _____

Address _____

I represent
☐ Self ☐ News Media
☐ Industry ☐ Community Group
☐ Academic ☐ Professional Assoc.
☐ Municipal ☐ Other (specify)

I am specificially interested in _____

Preferred meeting location _____

Note: Distribution of Task Force information will continue **only** if you complete annd return this card.

MINISTER'S TASK FORCE ON HAZARDOUS WASTES SUBMISSIONS

APPENDIX E
Oral and Written Submissions Received by the Task Force

Dartmouth: September 30/October 1	Written	Oral
1. Scott McKnight – Ocean Chem	x	x
2. Environmental Protection Service	x	x
3. Mark Bernard – City of Dartmouth, Engineering Dept.		x
4. Don Keith – Dartmouth City Schools		x
5. Tom Howard – Howard Industries		x
6. David O'Connor – Dartmouth General Hospital		x
7. Lesley Griffiths – Griffiths – Muecke	x	x
8. David Harrison – Dartmouth Chamber of Commerce		x
9. Rick Paynter – Town of Bedford		x
10. Andrew Hebda – Seatech	x	x
11. Clyde MacGregor – Seatech	x	x
12. Peter Weal – Halifax Wildlife Association		x
13. Larry Frederickson – Canchem	x	
14. Steve Milligan – Maritime Oil Products Inc.		x
Kentville: October 16, 1986		
15. Municipality of the County of Kings – Mr. R.G. Ramsay	x	x
16. George Archibald, MLA, Kings North	x	x
17. Acadia University Institute – Dr. Marshall Conley		x
18. Town of Windsor – Windsor Works Department/ Fire Department	x	x
19. Town of Kentville	x	x
20. Pat Gould-Thorpe		x
21. Dr. David Stiles: Acadia University Chemistry Dept.	x	x
22. Peggy Hope-Simpson	x	x
23. Andrea Lynn – Women's Health Education Network	x	x
Liverpool: October 22, 1986		
24. Shelburne School Board – Owen Whelock		x
25. Municipality of the County of Queens	x	x
26. Linda Hupman, Councillor – Municipality of the County of Queens	x	x
27. Canexel – Peter Hatt		x
28. Bowater Mersey – Warren Kelley		x
29. Queens District School Board – Jack Turner	x	x

30. Mary Doig – Queens General Hospital		x
31. South Shore Environmental Protection Assoc. – Bill Zimmerman		x
Sydney: October 29, 1986		
32. Sydney Fire Department – Donald Johnston, Chief	x	x
33. Cape Breton Development Corporation – Mr. R. Nicholson, Mr. M. Blais	x	x
34. Joint Expenditure Board – David Muise		x
35. Coalition Against Pesticides – Charles Restino	x	x
36. Margaree River and Community Protection Committee – Bob Peters	x	x
37. Bridgeport Basin Environment Comm. – Charles Musial	x	x
38. Len Sidney – Able Home Improvements		x
39 Neil Livingston, Inverness		x
40. Raymond Ivany – Centre for Occupational Health and Safety – University College of Cape Breton		x
41. Dr. A.T. Maroun, P. Eng. – University College of Cape Breton		x
42. Roberta Bruce, Sydney Nancy Anderson, Sydney	x	x
43. Sydney Harbours Board		x
Port Hawkesbury: October 30, 1986		
44. Municipality of the County of Richmond	x	
Truro: November 4, 1986		
45. Inland Oil Limited – James Bagnell	x	x
46. Town of Truro – Mayor D. Carter	x	x
47. Mr. W.J.D. Stone – Magstone		x
48. Mr. Tony Mee – Marwood		x
49. Domtar – Mr. R. Robichaud, Mr. G. Drummond		x
50. Colchester Hospital – Paul Brown, Joan MacDonald		x
New Glasgow: November 5, 1986		
51. Scott Maritimes – Joe VanBuskirk	x	x
52. Municipality of the County of Pictou		x
53. Michelin, New Glasgow – Mike Goble	x	x
54. Rick Spanick, Lonie Ferguson	x	x
55. Department of Chemistry, St. F.X. University Dr. Klapstein, Dr. Beck	x	x

Amherst: November 13, 1986

56. Cumberland District Planning Commission	x	x
57. Municipality of the County of Cumberland	x	x
58. Town of Amherst	x	x
59. Agriculture Canada, Nappan Experimental Farm – Mr. T.A. VanLunen	x	x
60. Cumberland Rejects Unsightly Dump (CRUD) – Dick Beswick, Paul Kyle	x	x

Yarmouth: November 20, 1986

61. TREPA Research Group (Tusket River Environmental Protection Association)	x	x
62. Yarmouth Fire Department	x	x
63. Municipality of Yarmouth	x	x

Halifax – Dartmouth: December 2, 3 and 4, 1986

64. Kingston Glassbusters		x
65. Annapolis Valley Affiliated Board of Trade	x	x
66. E.P.S., Environmental Emergencies	x	x
67. Dalhousie University, Environmental Health and Safety	x	x
68. Winlie Containers		x
69. Canadian Manufacturers Association	x	x
70. Ecology Action Centre	x	x
71. Community Planning Association	x	x
72. Norman Gridley	x	x
73. Enerwaste Engineering		x
74. Government of Canada	x	x
75. Nova Scotia Research Foundation	x	x
76. Retailer Gasoline Dealers Association	x	x
77. Porter Dillon Limited	x	x
78. Sanexen	x	x
79. Nova Scotia Power Corporation	x	x
80. Pratt and Whitney Canada		x
81. Tricil Limited	x	x
82. Association of Professional Engineers of Nova Scotia	x	x
83. Halifax Board of Trade	x	x
84. Canadian Institute of Forestry	x	x
85. Grace Maternity Hospital	x	x
86. Domtar Limited		x
87. Dr. D.G. Patriquin – Dalhousie University	x	x

88. Frank Sloan	x	x
89. Metro Infection Control Study Group	x	
90. Land Resources Coordinating Council	x	
91. Selvieland Industrial Products Limited		x
92. City of Dartmouth	x	x
93. Texaco Canada	x	x
94. Dartmouth Chamber of Commerce	x	x
95. Canchem Limited	x	x
96. Crop Protection Institute	x	x
97. Municipality of the County of Halifax	x	x
98. Department of Health	x	x
99. Dartmouth Lakes Advisory Board	x	x

Additional Submissions

100. Saint Mary's University – Faculty of Science Safety Committee	x
101. David Young, B. Comm., A.I.I.C. Sedgwick Tomenson Inc.	x
102. Joe Van Buskirk	x
103. Victor and Berit Pittman – St. Margarets Bay	x
104. Esso Petroleum Canada – Dartmouth Refinery	x
105. Atlantic Petroleum Association	x
106. Emergency Measures Organization – Municipality of Lunenburg	x
107. Highland View Regional Hospital – Amherst, Nova Scotia	x

APPENDIX F
Task Force Meetings

TASK FORCE MEETINGS (1986)	Dartmouth	September 30 and October 1
	Kentville	October 16
	Liverpool	October 22
	Sydney	October 29
	Port Hawkesbury	October 30
	Truro	November 4
	New Glasgow	November 5
	Amherst	November 13
	Yarmouth	November 20
	Halifax	December 2 and 3
	Dartmouth	December 4